

# **RFD4031 RFID Premium/Premium+ Sled**



**ZEBRA**

## **Product Reference Guide**

2023/10/09

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# About this Document

This guide provides information about setting up and using the RFD4031 UHF FRID Premium/Premium+ sled. Some screens shown in this guide may differ from the actual screens shown on the device.

## Related Documents

The following documents provide additional information about the RFD4031 sled:

- RFD4031 RFID Premium/Premium+ Quick Start Guide, p/n MN-004375-xx

## Notational Conventions

The following conventions are used in this document:

Bold text is used to highlight the following:

- Dialog box, window, and screen names.
- Drop-down list and list box names.
- Checkbox and radio button names.
- Checkbox and radio button names • Icons on a screen.
- Key names on a keypad
- Button names on a screen

.

Bullets (•) indicate:

- Action items
- List of alternatives
- Lists of required steps that are not necessarily sequential

Sequential lists (for example, those that describe step-by-step procedures) appear as numbered lists.

## Service Information

If you have a problem with your equipment, contact Zebra Global Customer Support for your region. Contact information is available at: [zebra.com/support](http://zebra.com/support).

When contacting support, please have the following information available:

- Serial number of the unit
- Model number or product name
- Software type and version number

Zebra responds to calls by email, telephone, or fax within the time limits set forth in support agreements.

If your problem cannot be solved by Zebra Customer Support, you may need to return your equipment for servicing and will be given specific directions. Zebra is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty.

If you purchased your Zebra business product from a Zebra business partner, contact that business partner for support.

# Getting Started with the RFD4031

The RFD4031 UHF RFID Premium sled provides RAIN Radio Frequency Identification (RFID) tag reading, writing, and locating capability to supported Zebra mobile computers and other host devices.

To use the RFD4031 sled for the first time with a mobile computer:

1. Insert the battery into the device.
2. Charge the RFD4031 sled using the charging cradle, charging cup, or USB-C cable.
3. Replace the cover with the adaptor that is specific to the mobile computer to be used with the sled.
4. Place the mobile computer into the adaptor headfirst.
5. Secure the mobile computer into the adaptor by pressing down on the bottom of the mobile computer.
6. Set the region using 123RFID Desktop or 123RFID Mobile.

For the latest versions of guides and software, go to: [zebra.com/support](https://zebra.com/support).

For detailed information, refer to the Product Reference Guide at: [zebra.com/support](https://zebra.com/support).

## Unpacking

This chapter provides information on RFD4031 RFID Premium sled parts, battery installation, mobile device attachment, LED indications, and charging. Carefully remove all protective material from the RFD4031 RFID Premium sled and save the shipping container for later storage and shipping.

Verify the following items are in the box:

- RFD4031 RFD Premium or Premium Plus Sled
- Battery
- Lanyard
- Quick Start Guide

Inspect the equipment for damage. If any equipment is missing or damaged, contact the Zebra Support Center immediately.

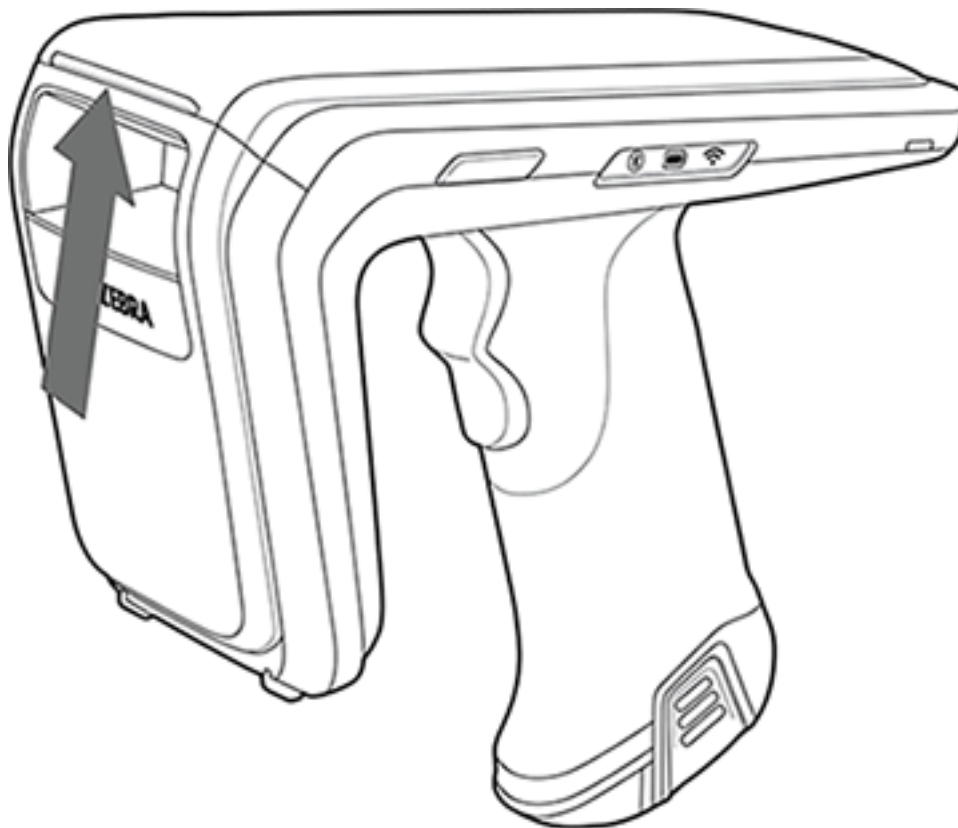
For a full list of accessories that can be used with the RFD4031 Premium/Premium Plus sled, refer to the product specific Technical Accessory Guide available at [zebra.com/support](https://zebra.com/support).

## Adaptor Installation

RFD4031 Ultra-Rugged UHF RFID sleds can be used with various mobile devices by using an adaptor to mount the device onto the sled.

To install the adaptor:

1. Remove the cover of the sled by pulling up on the lip.

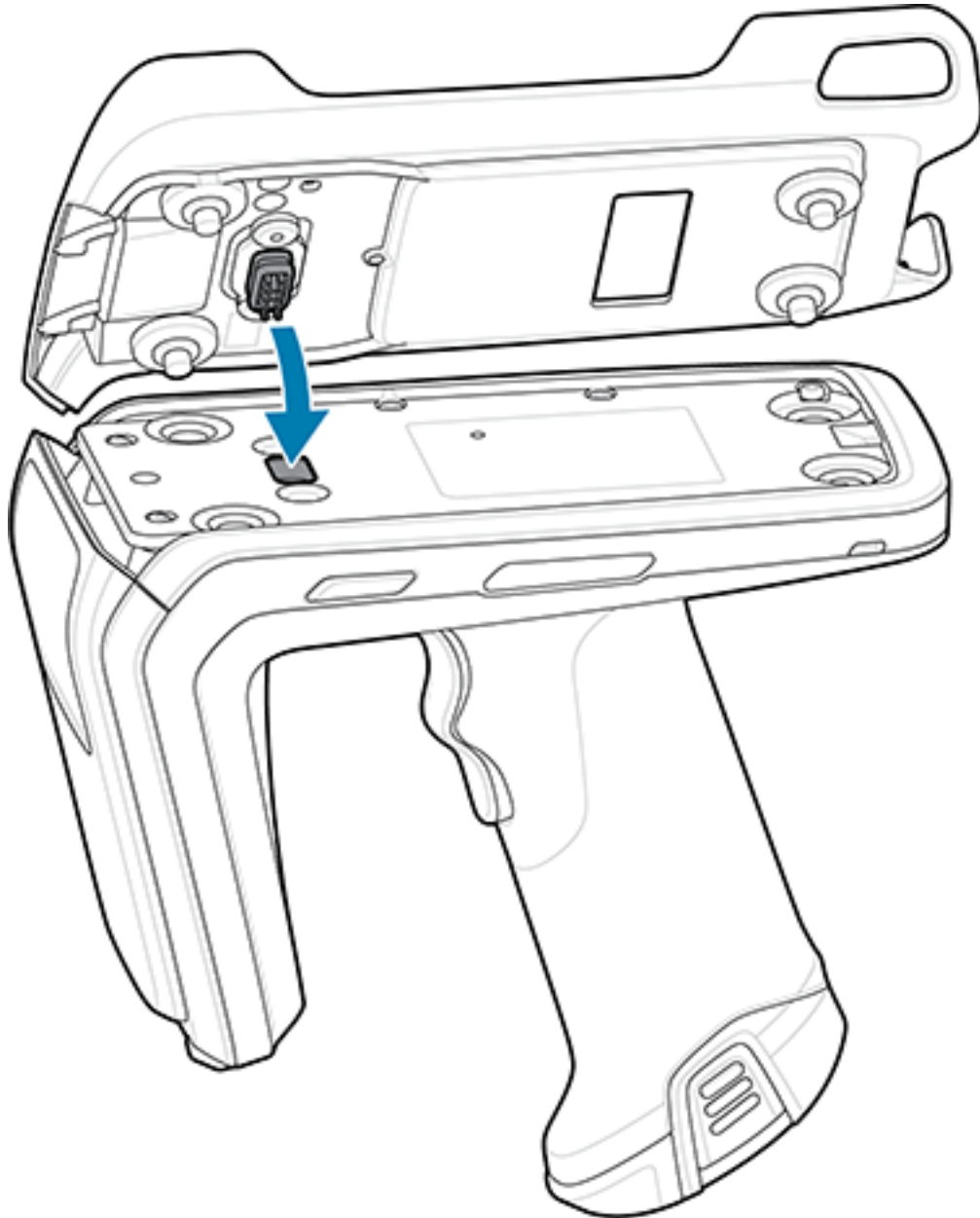




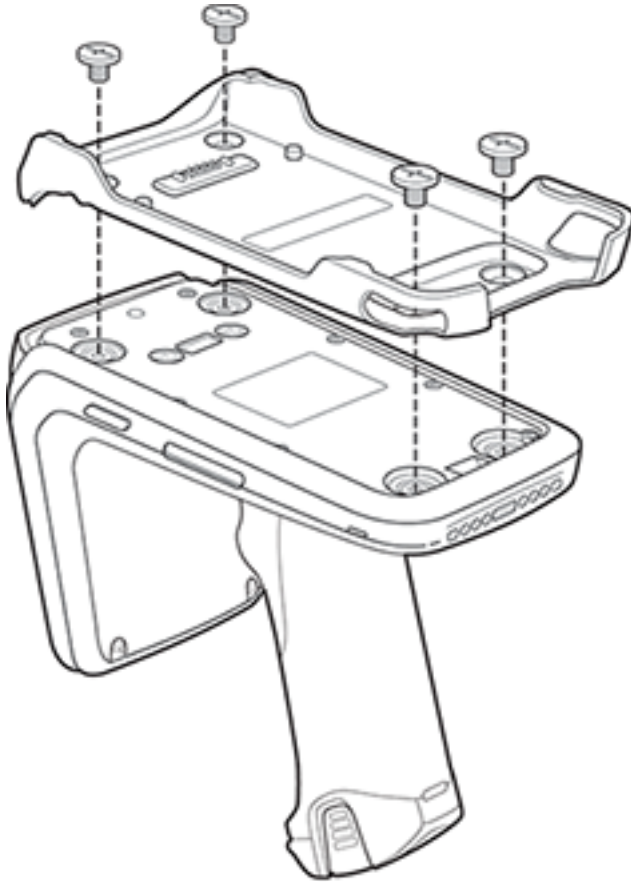
2. Ensure that the pogo pins are aligned and insert the adaptor into the sled.



**NOTE:** When installing the adaptor, use caution and ensure that the pogo pins are lined up directly prior to insertion into the sled.



3. Secure the adaptor onto the RFD4031 by fastening the four coin screws into the sled.



## Device Installation

To secure a mobile computer to the RFD4031 sled, place the top of the device fully forward into the RFD4031 sled adaptor and push down on the bottom of the mobile computer.

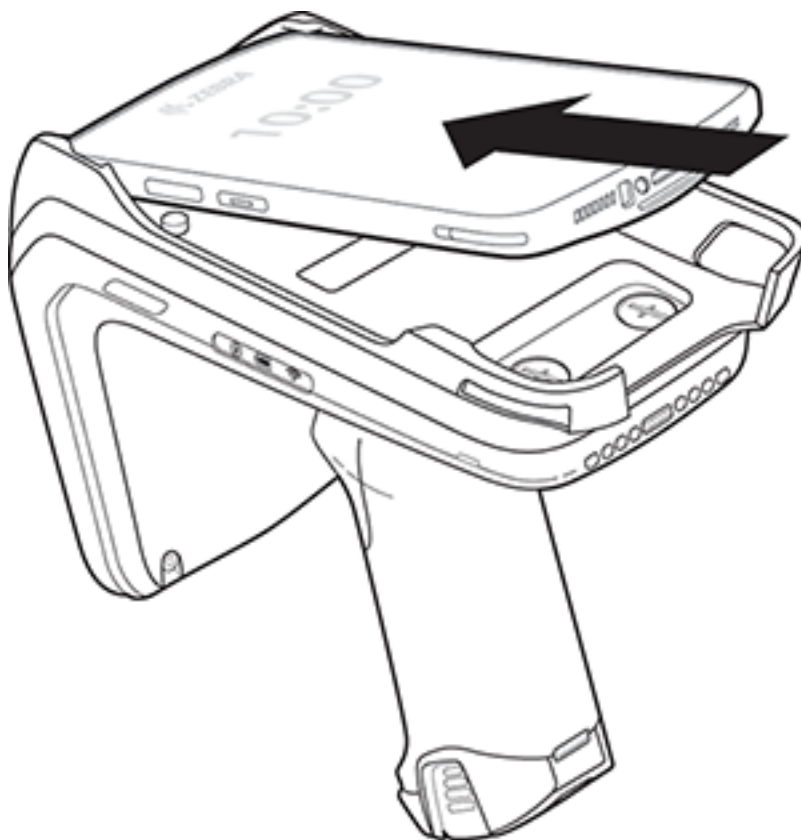


**NOTE:** Refer to the installation visual aide on the adaptor to view the correct device orientation for installation. For additional installation information, scan the QR code on the label to view the installation video.



**NOTE:** Use caution while installing the mobile computer into the adaptor and do not collide with the eConnex Communication Port.

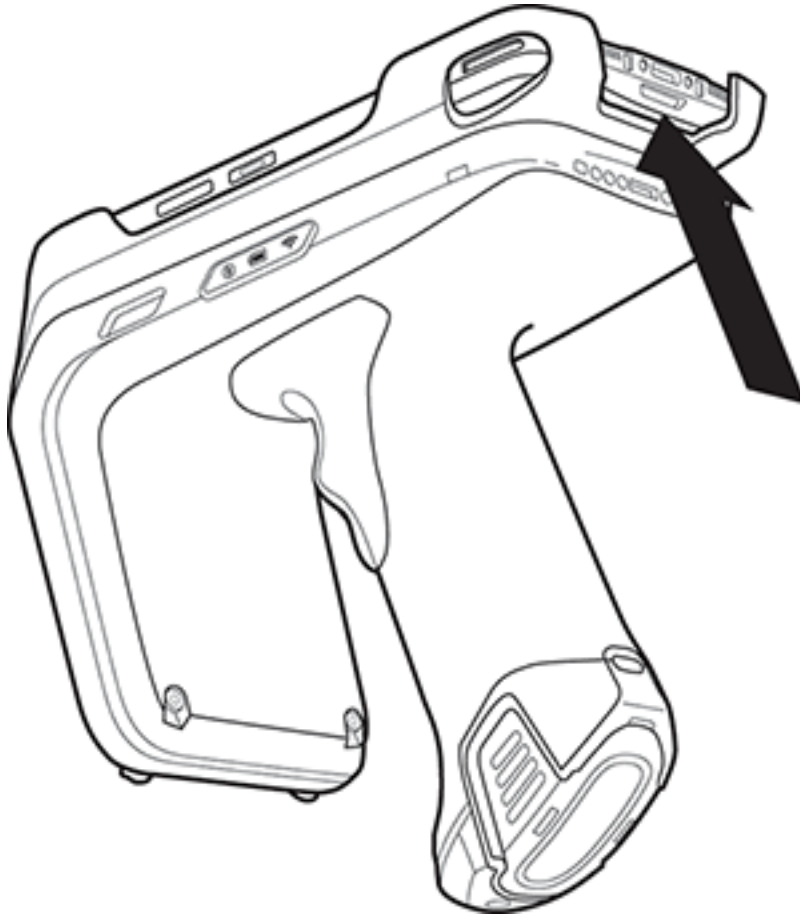
**Figure 1** Device Insertion



## Device Removal

To remove the mobile computer from the RFD4031 sled, firmly hold the sled handle and lift the device off of the sled adaptor.

**Figure 2** Device Removal

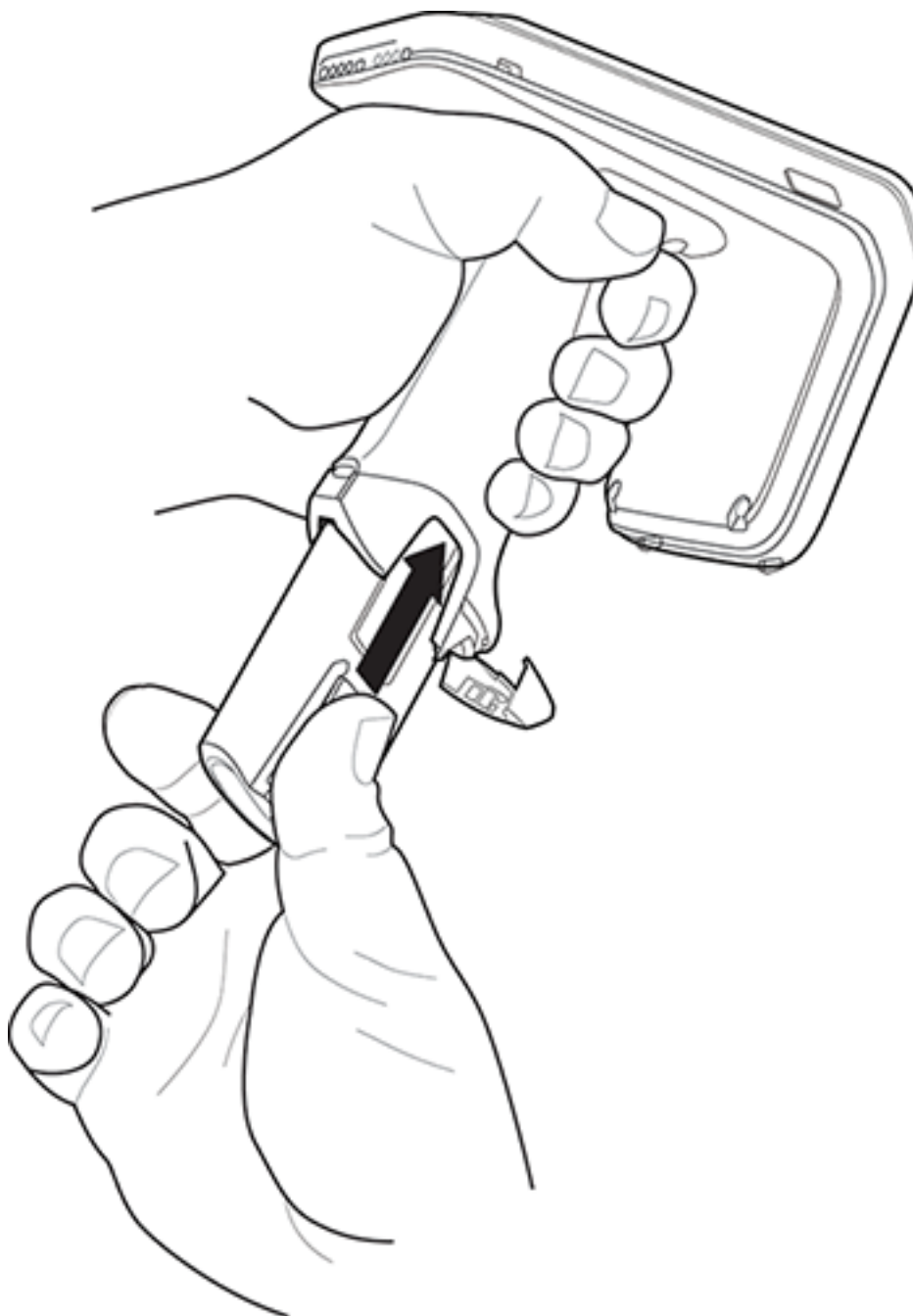


## Battery Replacement

The following section outlines the procedure for replacing the battery in the RFD4031.

To install the battery:

**Figure 3** Battery Insertion



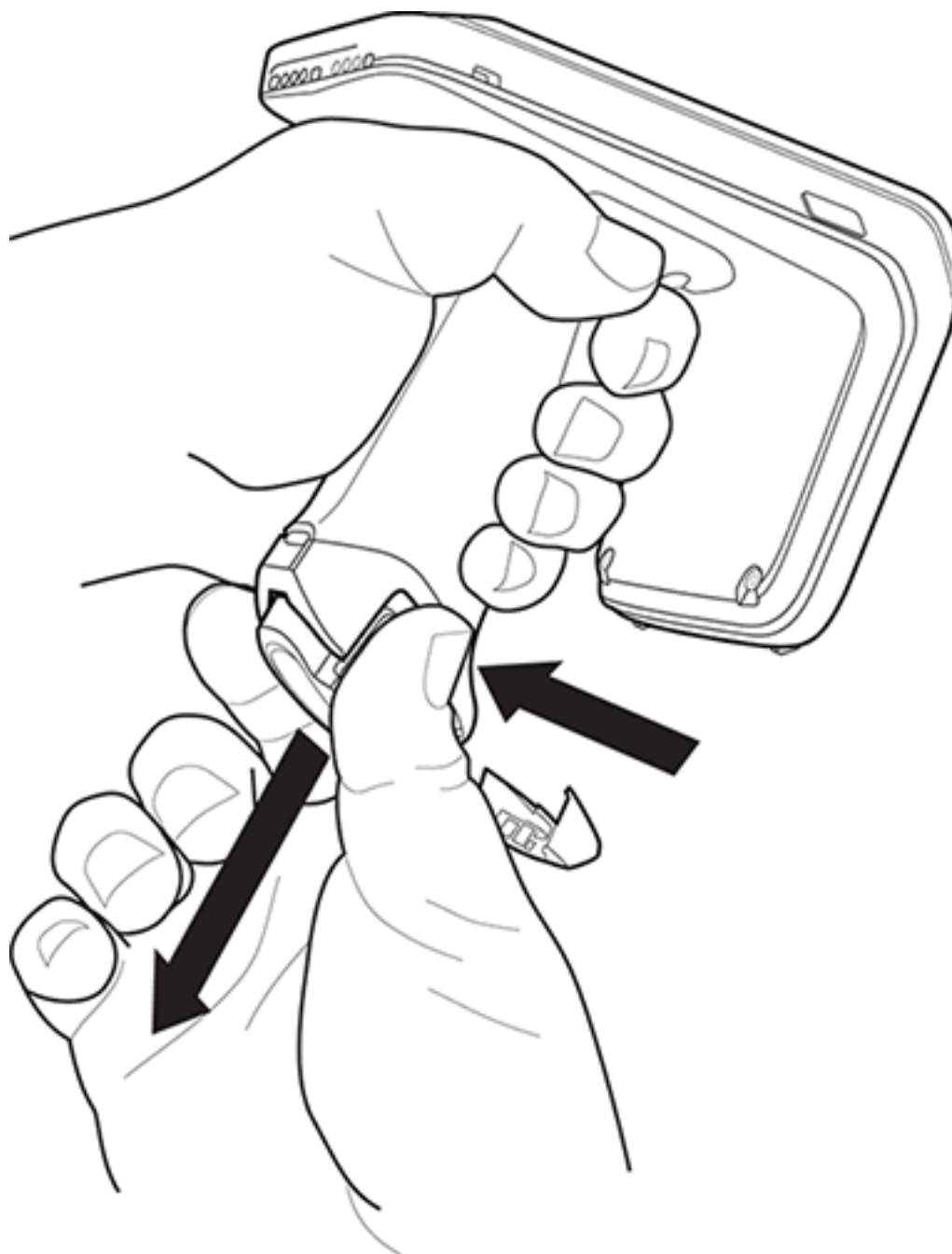
1. Align the battery with the notch facing the back of the device
2. Slide the battery into the handle of the device.

3. Snap the battery into the place.

## Battery Removal

To remove the battery:

**Figure 4** Battery Removal



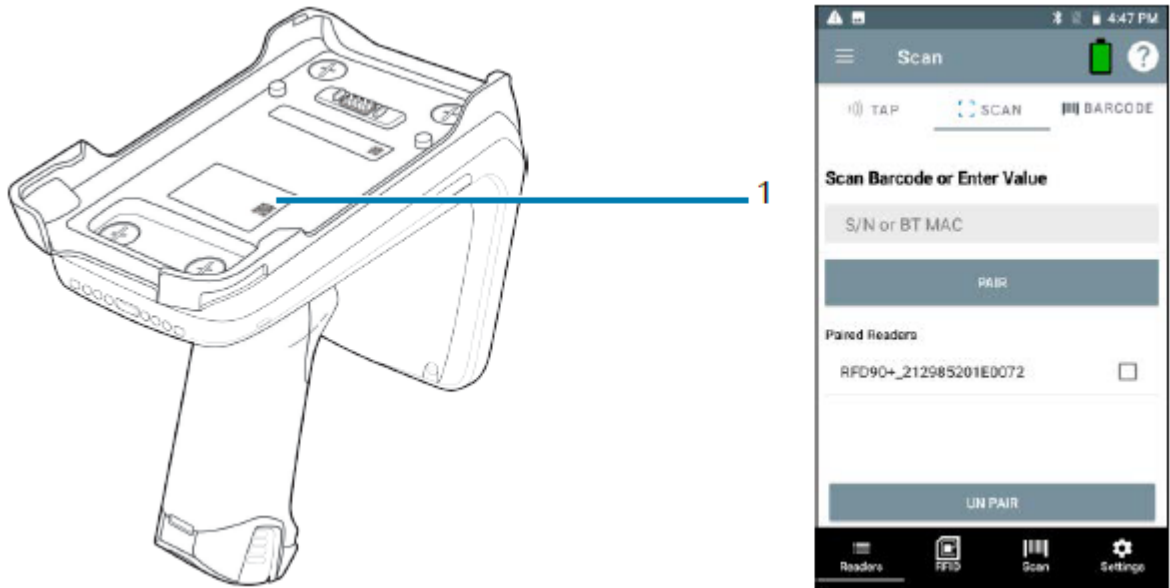
1. Pinch the clips on the battery to unlock.
2. Slide downwards to remove the battery from the device.

## Pairing the Sled with a Mobile Computer

Pair the sled with a mobile computer by connecting directly with the communication port, scanning the barcode on the device, or by using the NFC feature on the RFD4031 to activate NFC Bluetooth pairing and facilitate Bluetooth communication between the sled and the mobile computer.

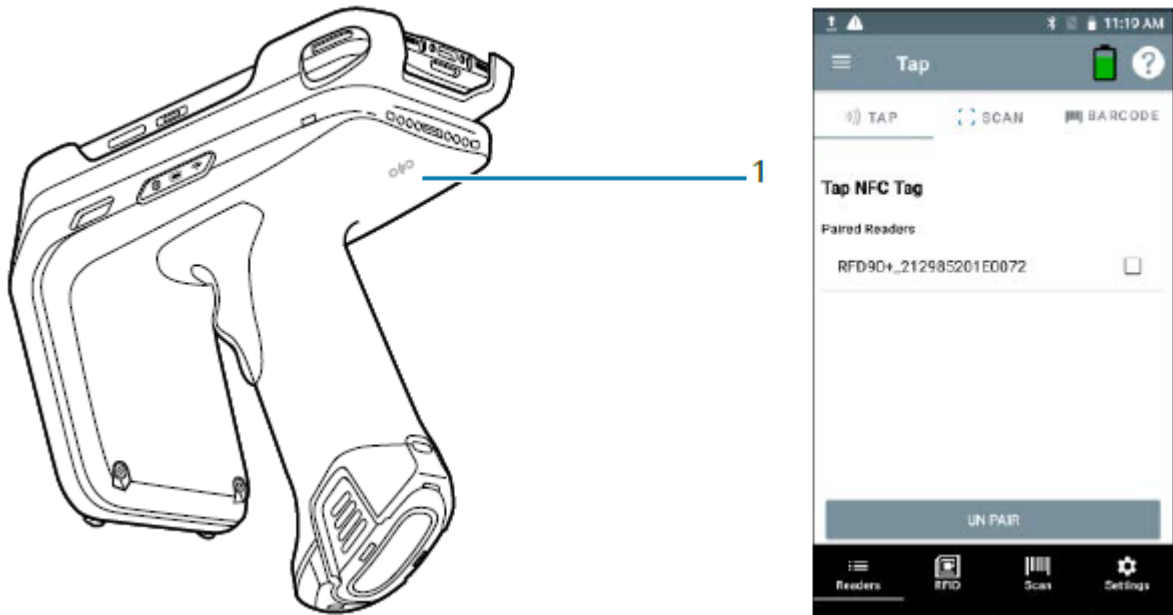
- To connect via scan, scan the code on the sled using the mobile computer to obtain the Bluetooth MAC address to pair the device to the sled.

**Figure 5** Scan Bluetooth MAC Address



- To connect via NFC, align the NFC area behind the handle of the sled with the NFC area on the back of the mobile computer to pair.

**Figure 6** Scan NFC Area to Pair Device

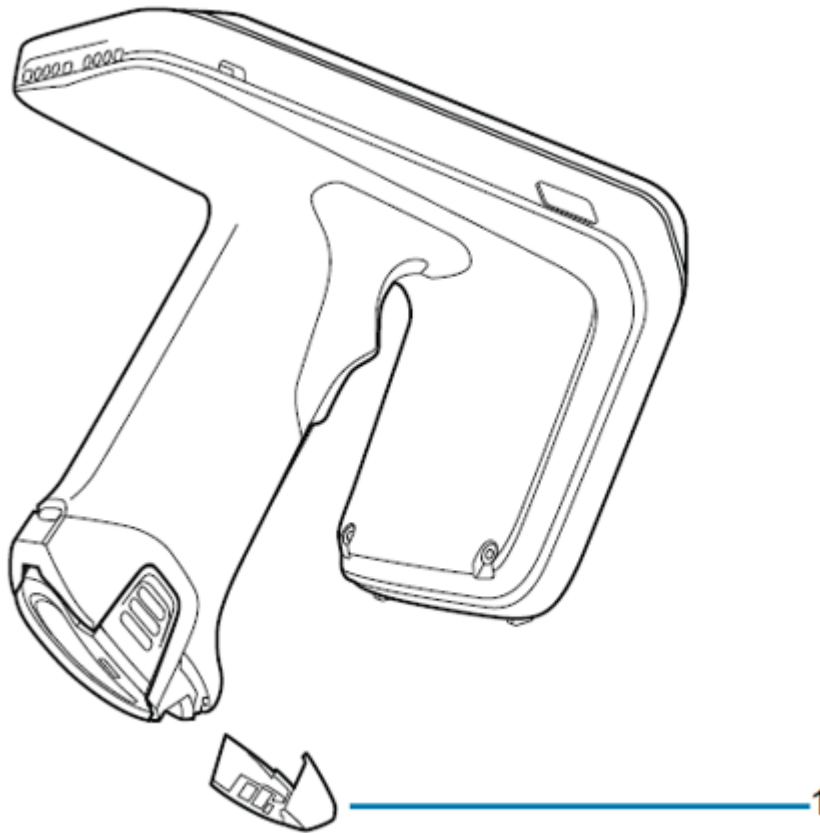


Once the sled has paired with a mobile computer, the sled recognizes the device going forward and automatically connects using the 123RFID Mobile or 123RFID Desktop Reader Discovery feature.

## Using the Rubber Locking Foot

The RFD4031 comes with a standard rubber foot on the bottom of the sled. An optional locking foot that is used in place of the standard locking foot and secures the battery of the sled is available as a purchasable accessory. For a full list of accessories that can be used with the RFD4031 RFID Premium sled, refer to the product specific Technical Accessory Guide available at: [zebra.com/support](https://zebra.com/support).



**Figure 7** Rubber Locking Foot

1	Rubber Locking Foot
---	---------------------

## Charging

Before using the RFD4031 for the first time, fully charge the battery by placing it in the charging cradle until the LED Power/Charging indicator turns solid green. The RFD40 RFID sled and mobile computer may be charged in the charging cradle individually or attached together.

When an RFD4031 RFID sled is removed from a charging cradle, it is automatically powered on. If a reader is not used for a duration of thirty minutes, the reader enters Off mode.



**NOTE:** The Charge Terminal parameter must be enabled to charge the mobile computer.

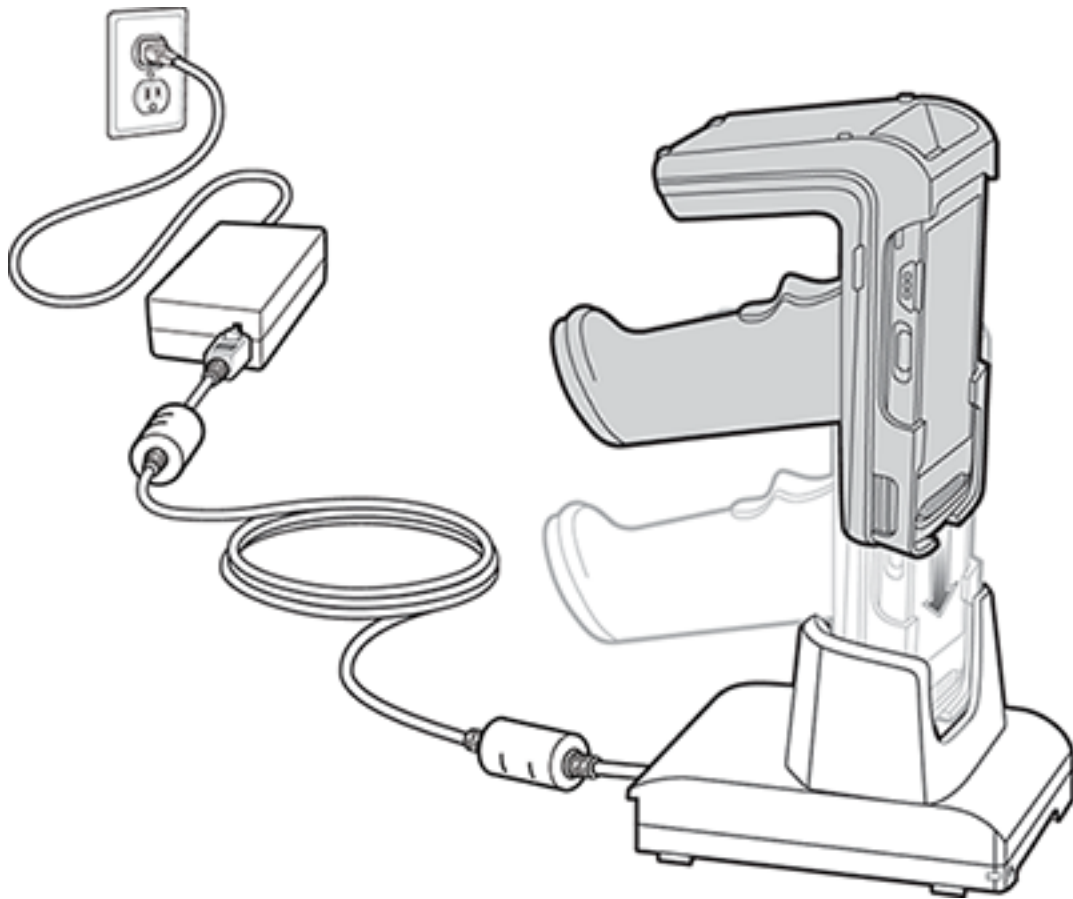


**NOTE:** A 12V power supply must be connected to the power jack when charging the sled using the cable cup accessory.



**NOTE:** The cradle does not charge the mobile computer if the battery is completely depleted or if it is not powered on.

**Figure 8** Single-Slot Charging Cradle



## Charging using the eConnex Interface

The mobile computer can be charged using the eConnex interface when connected to the sled. Before attempting to charge a mobile computer using the eConnex interface, verify that the mobile computer is compatible with pass-through charging by viewing the Technical Accessory Guide available at [zebra.com/support](http://zebra.com/support).



**NOTE:** The cradle does not charge the device if the battery is completely depleted or if it is not powered on.



**NOTE:** The Charge Terminal parameter must be enabled to charge the mobile computer.



**NOTE:** A 12V power supply must be connected to the power jack when charging the sled using the cable cup accessory.

## UI Indicators

The sled presents multiple forms of feedback to inform the user of various device states. The sled provides LED definitions for decode and battery status as well as beeper indications to indicate battery charge progress.

## LED Definitions

The sled provides user feedback in the form of LED indications for decode, battery, Bluetooth, and Wi-Fi states.

### Decode LED Definitions

The following table outlines the context in which decode LED feedback is provided and the indication that is presented for a given device state.



**NOTE:** The LED indicators on the sled differ from the LED indicators on the mobile computer being used with the sled.

**Table 1** Decode LED Indicators

Condition	Indication
Barcode Decode	Solid Green
Scan Error	Solid Red for two seconds.
RFID Decode	Solid Green
RFID Error	Solid Red for two seconds.
Read Error	Solid Red

### Battery LED Definitions

The following table outlines the context in which battery LED feedback is provided and the indication that is presented for a given device state.

**Table 2** Battery LED Definitions While Charging

Conditions	Indications
Charging	Amber (Blinking)
Battery Level Over 50%	Solid Green
Battery Level Over 20%	Solid Amber
Battery Level Under 10%	Solid Red
Battery Level Under 5% (entering Low Power Mode)	No LED
Suspend/Low Power Mode	No LED
Fully Charged	Solid Green
Charging Error	Amber (Fast Blinking)

### Bluetooth LED Definitions

The following table outlines the context in which Bluetooth LED feedback is provided and the indication that is presented for a given device state.

**Table 3** Bluetooth LED Definitions

Condition	Indication
Off	Off
On/Not Connected	Off
Discoverable	LED Blinking
Reconnect/Pairing in Process	LED Fast Blinking
Paired/Connected	Solid Blue
Out of Range	Off

**Wi-Fi LED Definitions**

The following table outlines the context in which Wi-Fi LED feedback is provided and the indication that is presented for a given device state.

**Table 4** Wi-Fi LED Definitions

Condition	Indication
Connecting	Green (Blinking)
Connected	Green (Stays On)
Transmission Error/Out of Range	Red (Stays On)

## Beeper Indications

The sled provides user feedback in the form of beeper tones for decode, battery, Bluetooth, and Wi-Fi states.

**Decode Beeper Indications**

The following table outlines the context in which beeper feedback is provided and the indication that is presented for a specific decode event

**Table 5** Decode Beeper Indications

Condition	Tone
Good Barcode Decode	Short high beep
Decode Transmission Error	Four long low beeps
Good RFID Decode	Short medium tone
RFID Error	Four long low beeps
Error Message (Other)	No beep
Sled Memory Full (Batch Mode)	Long tones for 5 seconds

**Battery Beeper Indications**

The following table outlines the context in which decode LED feedback is provided and the indication that is presented for a given device state.

**Table 6** Battery Beeper Indications

Condition	Tone
Battery Level Over 50%	No beep
Battery Level Over 20%	No beep
Battery Level Under 10%	No beep
Battery Level Under 5% (entering Low Power Mode)	One beep
Suspend/Low Power Mode	Low/medium/high beeps
Fully Charged	One beep
Charging Error	Three beeps

**Bluetooth Beeper Indications**

The following table outlines the context in which beeper feedback is provided and the indication that is presented for a specific Bluetooth state.

**Table 7** Bluetooth Beeper Indications

Condition	Tone
Off	No beep
On/Not Connected	No beep
Discoverable	No beep
Reconnect/Pairing in Process	No beep
Paired/Connected	Short Low/High beep

**Wi-Fi Beeper Indications**

The following table outlines the context in which beeper feedback is provided and the indication that is presented for specific Wi-Fi states.

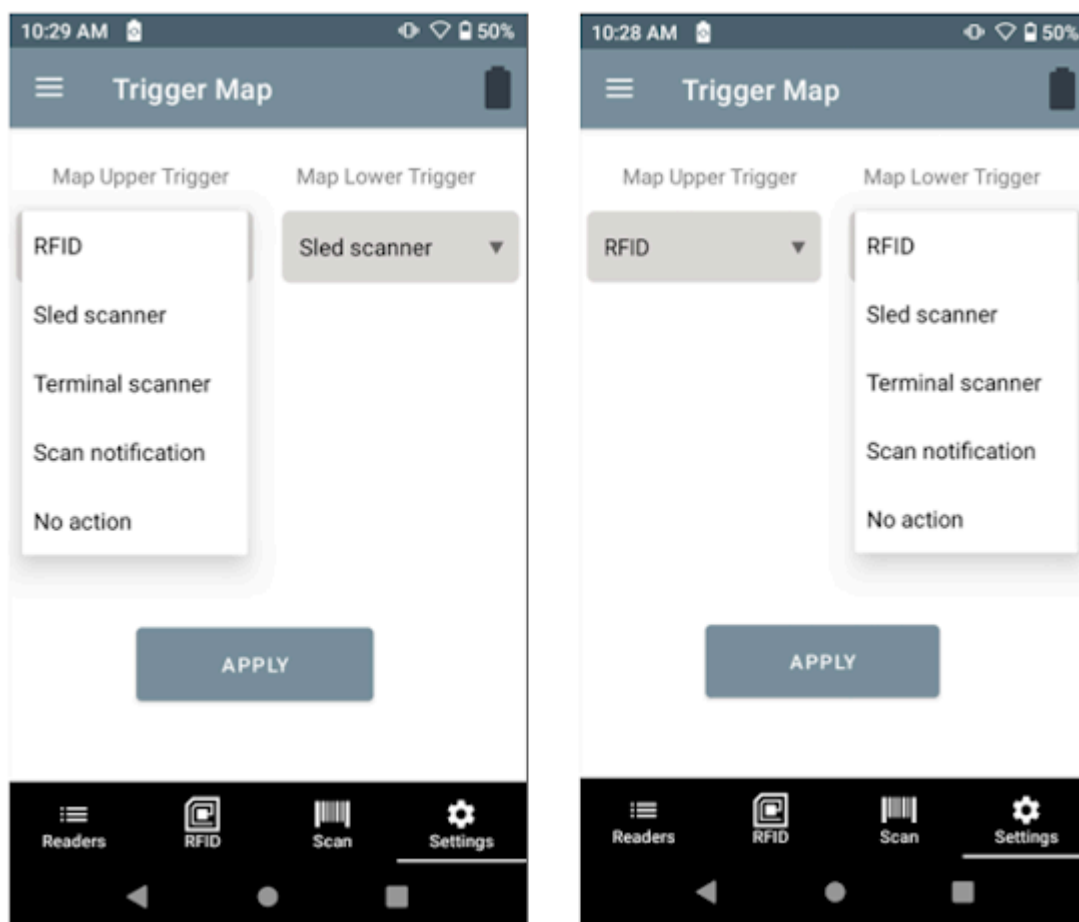
**Table 8** Wi-Fi Beeper Indications

Condition	Tone
On/Not Connected	No beep
On/Pairing in Process	No beep
On/Connected	Short/Low/High beep
Out of Range	Short/High/Low beep
Pairing Error	No beep
Off	No beep

## Trigger Mapping Modes

The following table outlines the supported modes that can be mapped to the upper or lower trigger of the RFID sled.

Access Trigger Mapping using 123RFID Mobile from the Settings menu. For additional information, visit [zebra.com/123rfid-mobile.html](http://zebra.com/123rfid-mobile.html).



**Table 9** Mappable Trigger Modes

Condition	Description
RFID Start/Stop	Start and stop RFID decode operations.
Sled Scanner	Barcode decode from the sled.
Terminal Scanner	Barcode decode from the mobile computer. Feature support is determined by the mobile computer being used with the sled.
Scan Notification	Scan trigger press notification.
No Action	No action when the trigger is pressed.

## Performing a Factory Default Reset on the Sled

The below function can be performed using a USB cable, cable cup or USB single slot cradles with a PC:

1. Disconnect and remove the battery and power sources from the sled.
2. Connect the sled to a power source using a USB cable, cable cup, or cradle. Observe the flashing battery LED.
3. Press and hold the upper trigger and immediately insert the battery into the device.
4. Listen for the confirmation beep indicating that the factory default reset is about to begin and release the trigger.

The sled reboots with a factory reset default configuration.

## Performing a Factory Reset By Scanning a Barcode

1. Pull the trigger to scan the Restore Defaults barcode:



2. Allow the sled to reboot.

The default factory settings are in place when the sled powers back on.

### See Also

[Factory Reset](#)

[Saving an Online Configuration](#)

# Maintenance

This chapter provides suggested sled maintenance, troubleshooting, and technical specifications.



**CAUTION:** Always wear eye protection. Read warning label on compressed air and alcohol product before using. If you have to use any other solution for medical reasons please contact Zebra for more information.



**WARNING:** Avoid exposing this product to contact with hot oil or other flammable liquids. If such exposure occurs, unplug the device and clean the product immediately in accordance with these guidelines.



**IMPORTANT:** Use pre-moistened wipes and do not allow liquid cleaner to pool. Ensure the following items are addressed when using sodium hypochlorite (bleach) based cleaners:

- For device only. Do not use on cradle.
- Always follow the manufacturer's recommended instructions: use gloves during application and remove the residue afterwards with a damp cloth to avoid prolonged skin contact while handling the device.
- Due to the powerful oxidizing nature of sodium hypochlorite, the metal surfaces, including electrical contacts on the device, are prone to oxidation (corrosion) when exposed to this chemical in the liquid form (including wipes) and should be avoided. In the event that these type of disinfectants come in contact with metal on the device, prompt removal with a dampened cloth after the cleaning step is critical.



**IMPORTANT:** To avoid damage to the device, use only approved cleaning and disinfecting agents listed below. The use of non-approved cleaning or disinfecting agents may void the warranty.

## Harmful Ingredients

The following chemicals are known to damage the plastics on Zebra devices and should not come in contact with the device:

- Acetone
- Ammonia solutions
- Aqueous or alcoholic alkaline solutions
- Aromatic and chlorinated hydrocarbons
- Benzene



- Carbolic acid
- Compounds of amines or ammonia
- Ethanolamine
- Ethers
- Ketones
- TB-lysoform
- Toluene
- Trichloroethylene.

### Approved Cleaners

The following solutions are approved for cleaning the sled.

- Isopropyl alcohol 70% (including wipes)
- 10% Bleach (Sodium Hypochlorite 0.55%) and 90% Water solution
- 3% Hydrogen Peroxide and 97% Water solution
- Mild dish soap.

### Cleaning the Sled

Routinely cleaning the exit window is required. A dirty window may affect scanning accuracy. Do not allow any abrasive material to touch the window.

To clean the device:

1. Dampen a soft cloth with one of the approved cleaning agents listed above or use pre-moistened wipes.
2. Gently wipe all surfaces, including the front, back, sides, top and bottom. Never apply liquid directly to the device. Be careful not to let liquid pool around the device window, trigger, cable connector or any other area on the device.
3. Be sure to clean the trigger and in between the trigger and the housing (use a cotton-tipped applicator to reach tight or inaccessible areas).
4. Do not spray water or other cleaning liquids directly into the exit window.
5. Wipe the device exit window with a lens tissue or other material suitable for cleaning optical material such as eyeglasses.
6. Immediately dry the device window after cleaning with a soft non-abrasive cloth to prevent streaking.
7. Allow the unit to air dry before use.

### 8. Connectors:

- Dip the cotton portion of a cotton-tipped applicator in isopropyl alcohol.
- Rub the cotton portion of the cotton-tipped applicator back-and-forth across the connector on the Zebra sled at least 3 times. Do not leave any cotton residue on the connector.
- Use the cotton-tipped applicator dipped in alcohol to remove any grease and dirt near the connector area.
- Use a dry cotton tipped applicator and rub the cotton portion of the cotton-tipped applicator back-and-forth across the connectors at least 3 times. Do not leave any cotton residue on the connectors.

# Technical Specifications

The following table outlines the physical characteristics and user environment of the RFD4031 RFID Premium/Premium+ sled.

**Table 10** RFD4031 RFID Premium/Premium+ Technical Specifications

Item	Description
Physical Characteristics	
Dimensions	Height: 15.6 cm (5.94 in.) Width: 8.4 cm (3.3 in.) Length: 16.6 cm (6.5 in.)
Weight	Premium: ~18.8 oz./~544 grams (sled with battery) Premium+: ~19.4 oz./~550 grams (sled with battery)
Power	PowerPrecision+ 7000 mAh Li-Ion battery
Frequency Range/RF Output	US: 902-928 MHz; 0 - 30 dBm (EIRP) EU: 865-868 MHz; 0 - 30 dBm (EIRP) Japan: 916-921 MHz (w LBT); 0 - 30 dBm (EIRP)
User Environment	
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	0°C to 40°C (32°F to 104°F)
Relative Humidity	Operating: 5 to 85% non-condensing
Sealing	IP54
Drop Specification	Multiple 5 ft./1.8 m drops onto concrete
Tumble Specification	500 1/2 meter tumble cycles (1000 drops) at 20°C
Electrostatic Discharge	± 15 kV air discharge ± 8 kV direct discharge ± 8 kV indirect discharge

# 123RFID Desktop Application

123RFID Desktop is a setup and optimization tool for RFID sleds. This section describes the application and its features.

## Application Features

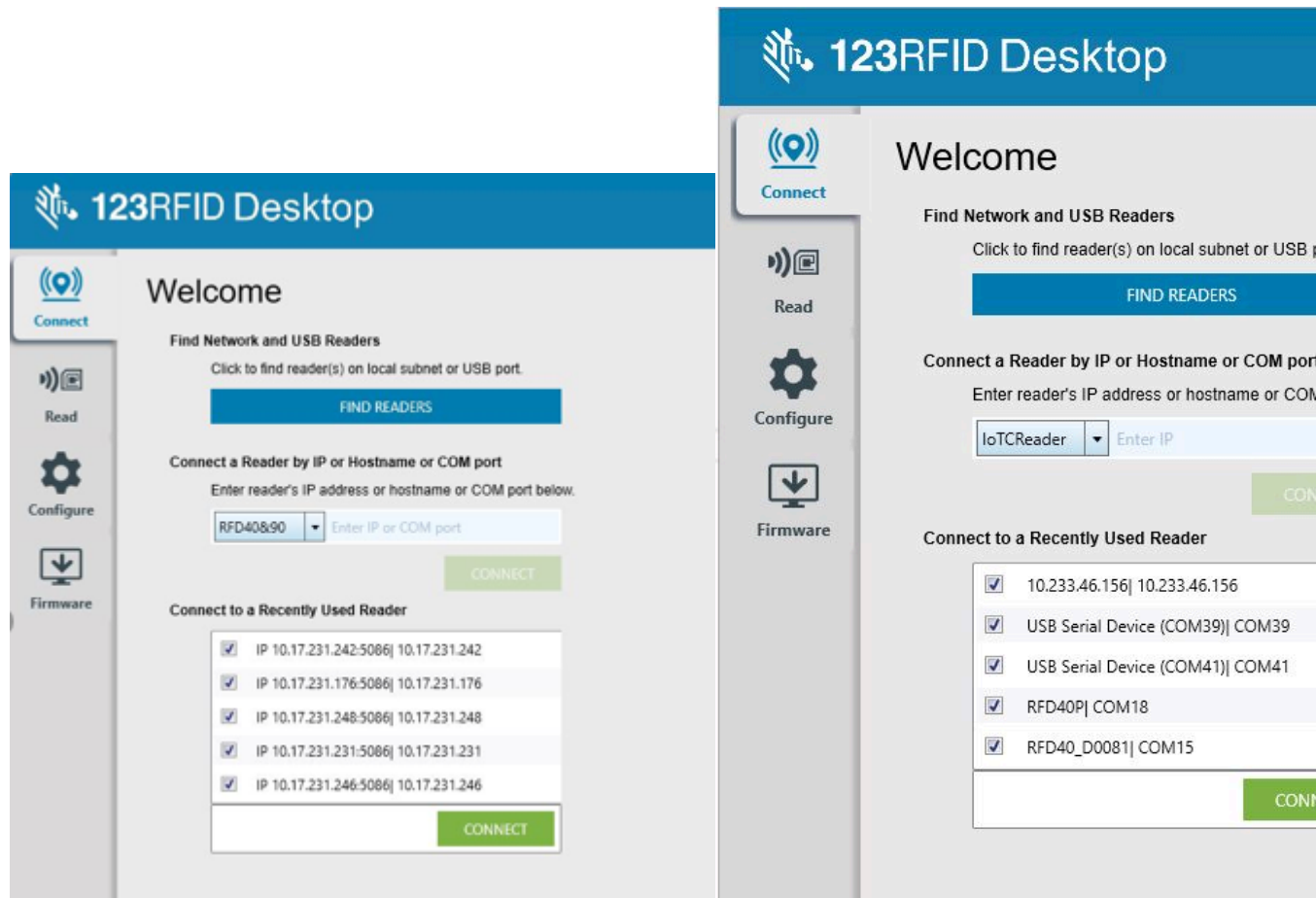
- Connect - allows users to search for readers on the local subnet, USB port, or Bluetooth.
- Read - allows users to start an inventory, view summary metrics on tag reads, and sort, filter, and export tag data. Select an antenna and set the power level to begin building an inventory.
- Configure - allows users to configure reader and scanner settings. Settings can be saved to a file or as a printed report.
- Firmware - allows users to update the firmware on up to five devices.



**NOTE:** The Scan tab is available only for connected sleds that have an imager.

## Connect

Users can locate readers on the local subnet or via USB port by clicking **Find Readers** or by entering the IP, hostname, COM port, or by Bluetooth and clicking **Connect**.



To discover readers on the network, view the **Available Readers** section of the application and click **Connect** on one of the associated rows to connect to the specified reader.

123RFID Desktop

1 Reader Connected

View to Webcam

Help with Discovery

Connect

Read

Scan

Configure

Firmware

Reader Discovery

Connected Readers

READ

DISCONNECT ALL

Reader Name

Model

IP/COM Port

Reader ID

Firmware

Serial Number

Mfg. Date

Antenna

Country Code

DISCONNECT

USB Serial Device (COM408)

RFID401-0188705-IP

COM408

2127552F1C0881

RA4P000-000-AN1

2127552F1C0881

30Sep21

JPN

Available Readers (5)

PING

CONNECT

RFID401-2110552F1C0886

RFID401-2110552F1C0886

COM418

PING

CONNECT

RFID401-2127552F1C0881

RFID401-2127552F1C0881

COM408

PING

CONNECT

RFID401-2127552F1C0881

RFID401-2127552F1C0881

COM412

PING

CONNECT

RFID401-2127552F1C0881

RFID401-2127552F1C0881

COM408

PING

CONNECT

RFID401-2127552F1C0881

RFID401-2127552F1C0881

COM408

Enter IP or Hostname of COM port

PING

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## Read

The read feature allows users to start an inventory. Users can view summary metrics on tag reads by the reader, sort, filter, and export tag data to a file. Select the antenna and set the power level to start an inventory.

The screenshot shows the 123RFID Desktop application's 'Data View' screen. The top navigation bar includes icons for 'Connect', 'Read', 'Scan', 'Configure', and 'Firmware'. The main display area features a table of tag reads with the following columns: EPC ID, Count, RSSI, First Seen, and Last Seen. The table lists 20 rows of data, each representing a tag read. To the right of the table, there is a 'START' button and a 'Running Time' indicator showing '00:00:00.00'. Below the table, there is a summary bar with the following data: 19 TAGS, 31 READS, 5 DEADS. The bottom of the screen shows a 'Reader' section with a table of reader statistics, including 'Tags', 'Reads', 'Read Rate', and 'Ant 1' through 'Ant 8'.

Click **Start** to start reading tags and recording an inventory.

To download the inventory data for offline viewing, click **Export** to export tag data to Excel.

- Export Summary - save a snapshot of all the tag reads displayed on the Read screen in Excel.
- Export History – save timeline data for tags read in Excel.

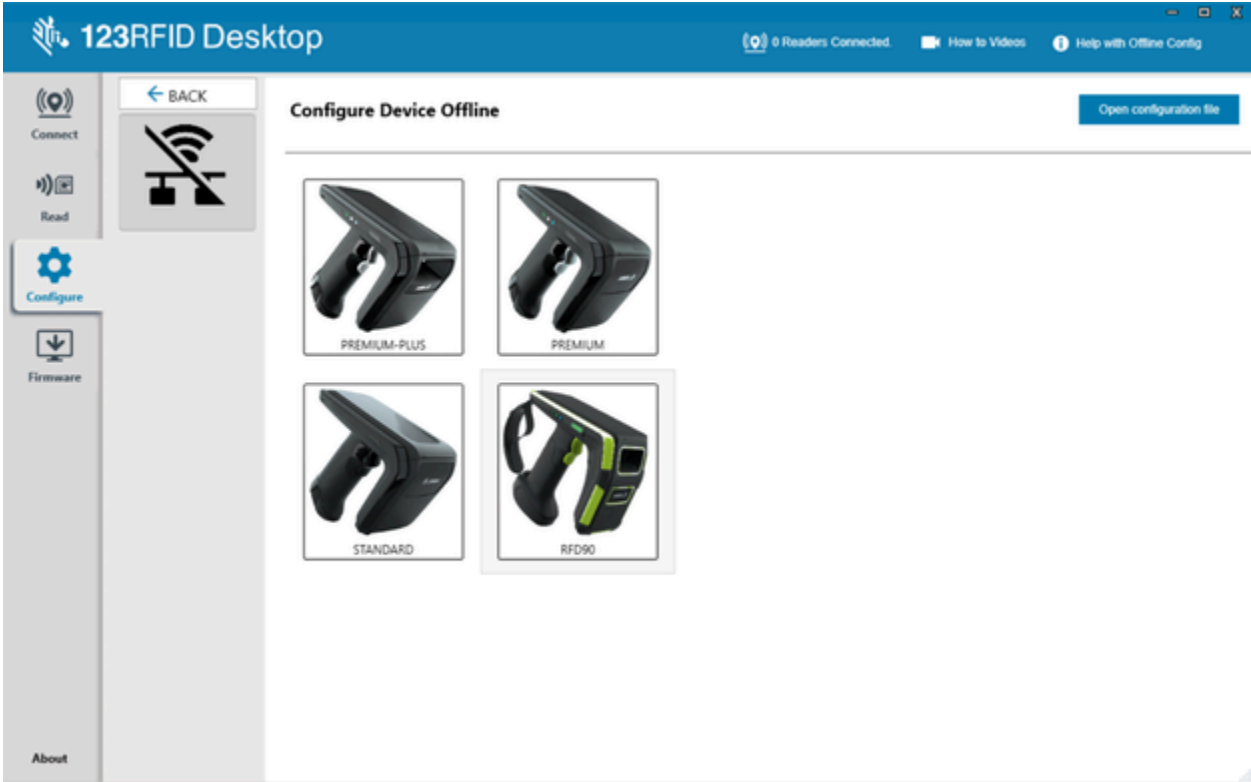
## Offline Reader Configuration

The Reader Configuration wizard configures the reader and antenna settings and saves them instantly. Users can also save settings to a file on the PC or print a report.

Click **Edit Configuration on Reader** to edit the reader's settings and use the wizard to do the following.

- Assign names to the reader and the connected antennas.
- Set reader settings or reset them to factory defaults.
- Change the reader's region configuration.
- Create rules for your GPIO (General Purpose Input/Output) accessories on when to trigger inventory and output results.
- Save/print configurations to a file.
- Deploy the configuration file to a new device.

Click **Open Configuration** to load a saved configuration file to another connected reader from the PC.

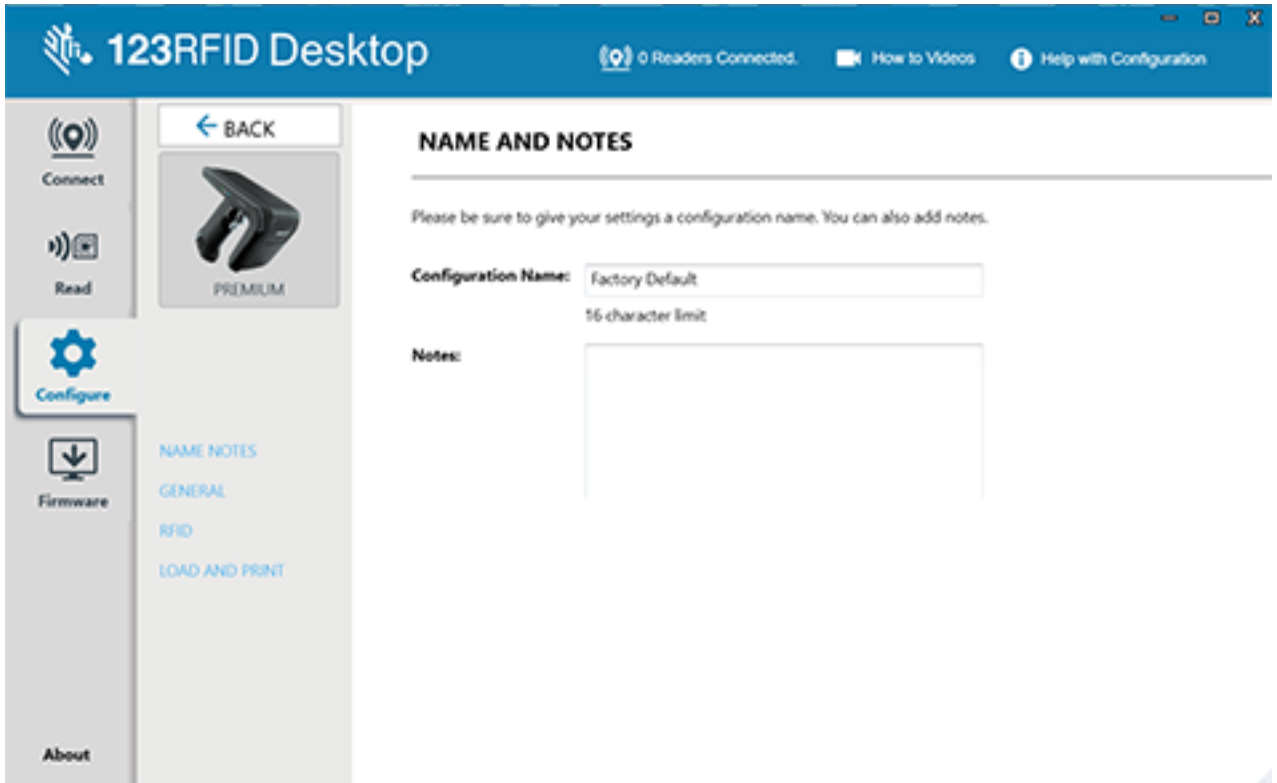


Beeper volume, dynamic power, off mode timeout duration, and Bluetooth discovery settings are configurable for online readers.



## Reader Name

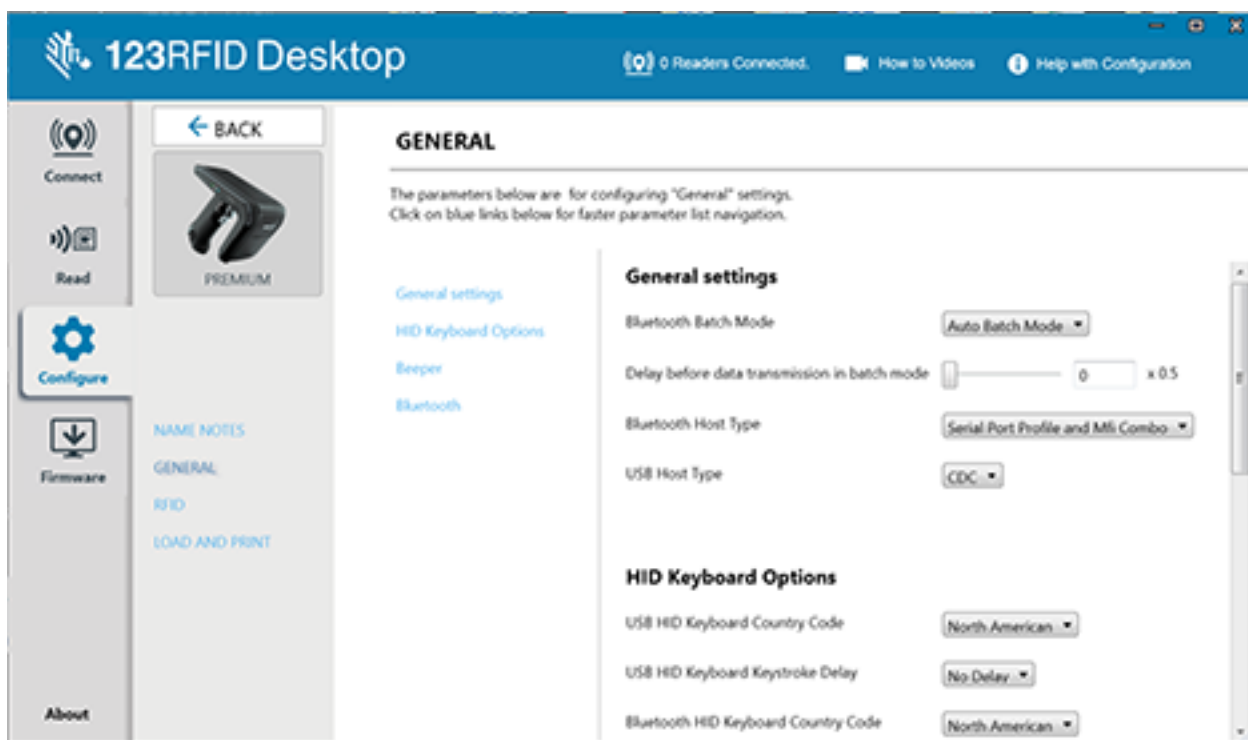
Add a description or name the reader by filling out the form fields on the name screen.



## Parameter Settings

General Settings that are configurable include enabling Bluetooth Batch Mode, setting a delay before data is transmitted in Batch Mode, setting the Bluetooth Host Type, and setting the USB Host Type.

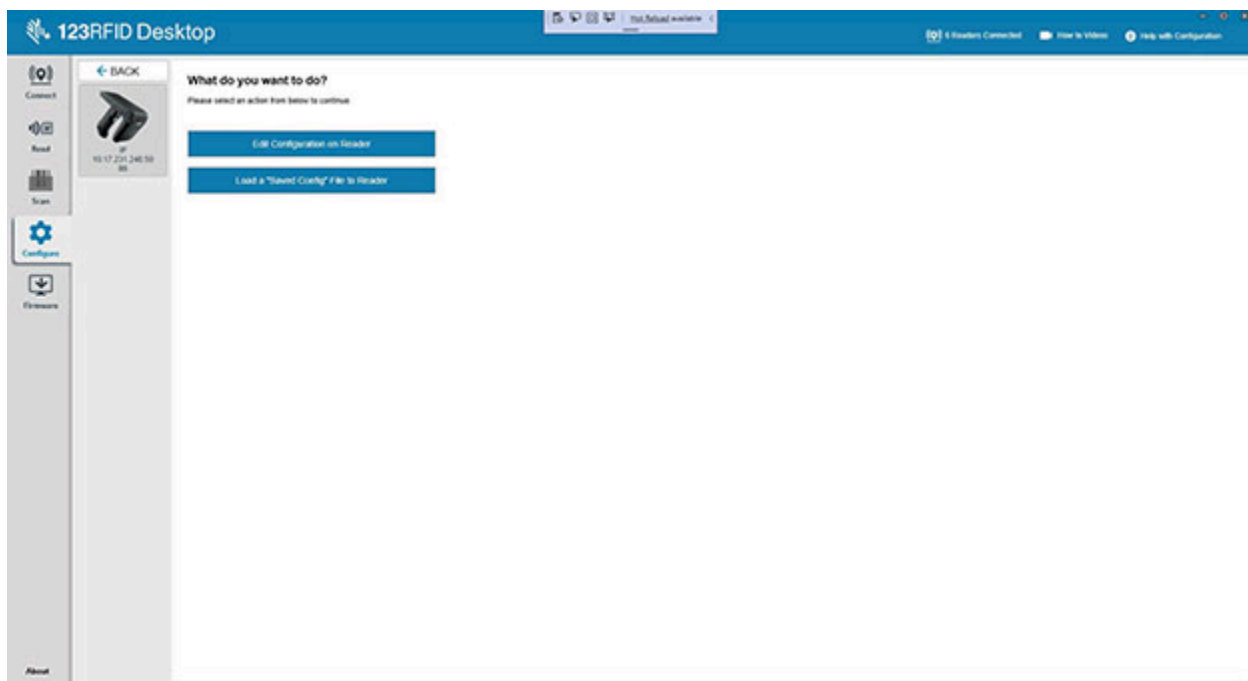
HID Keyboard Options include selecting the country code and keystroke delay. Bluetooth settings include enabling the device to attempt to reconnect automatically upon losing connection, beeper feedback when the device reconnects, setting a timeout period for the device to become discoverable, and automatically attempting to reconnect to the Bluetooth host. Beeper Settings include volume, tone, whether the sled beeps to confirm a successful decode, and the ability to suppress power-up beeps.



## RFID Configuration (Online)

Configurable options for offline readers include regulatory configuration, RFID data reporting, filter and querying options, trigger, and advanced options.

When connected via IP, Edit the configuration of the reader or load a saved configuration onto the device.

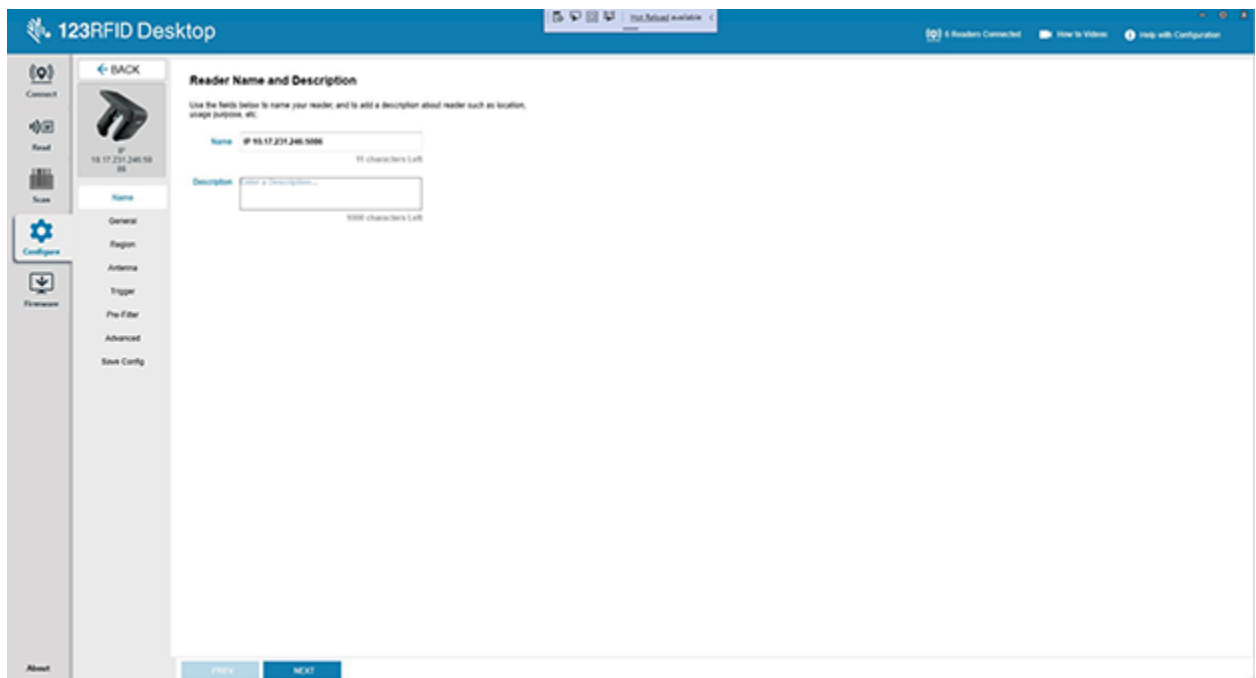




**NOTE:** Ensure that the reader is configured for the correct region it is used in. Configuring the device for a different region is illegal.

Online Configurable options include

- General Settings
- Regulatory Configuration options such as setting the country of operation and enabling or disabling Channel Hooping and Channel Mask.
- Antenna
- Trigger Configuration such as defining RFID operations and the conditions in which they are initiated and stopped.
- Pre-Filtering
- Advanced
- Scanner Configuration



## RFID Configuration (Offline)

Configurable options for offline readers include regulatory configuration, RFID data reporting, filter and querying options, trigger, and advanced options.

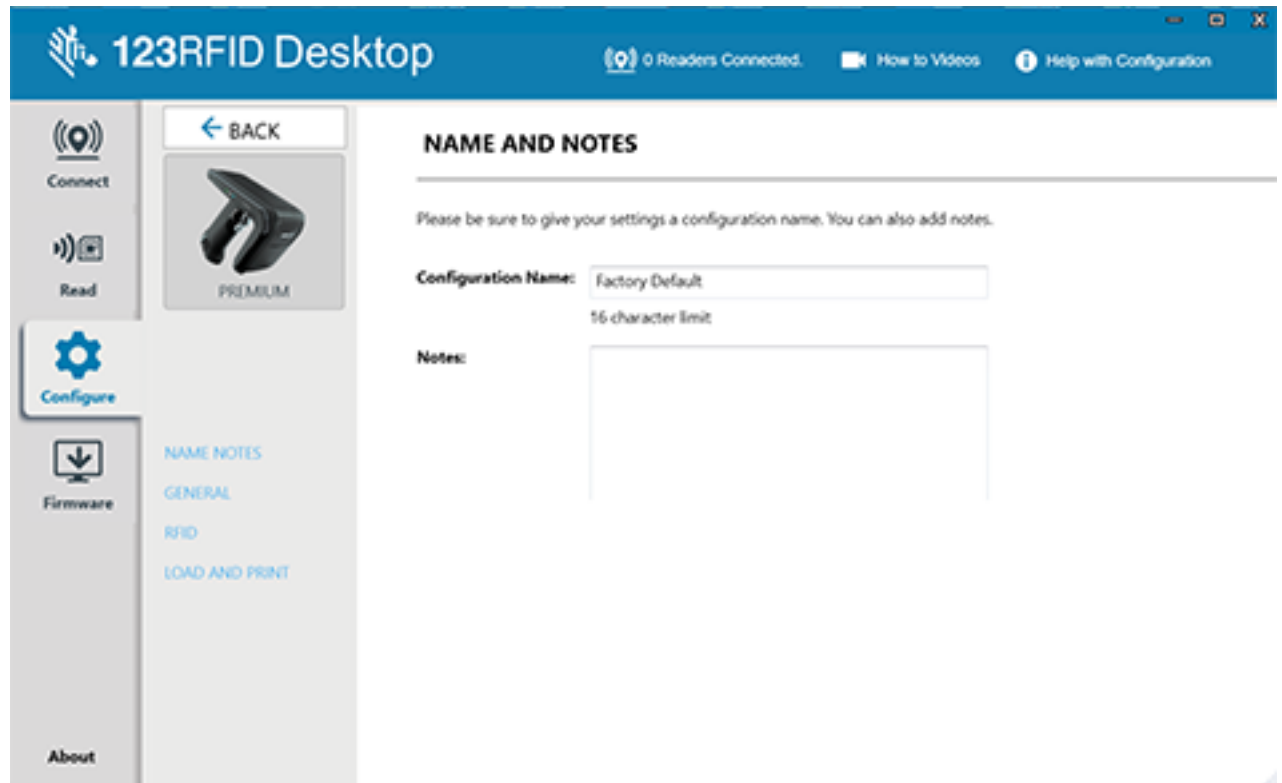


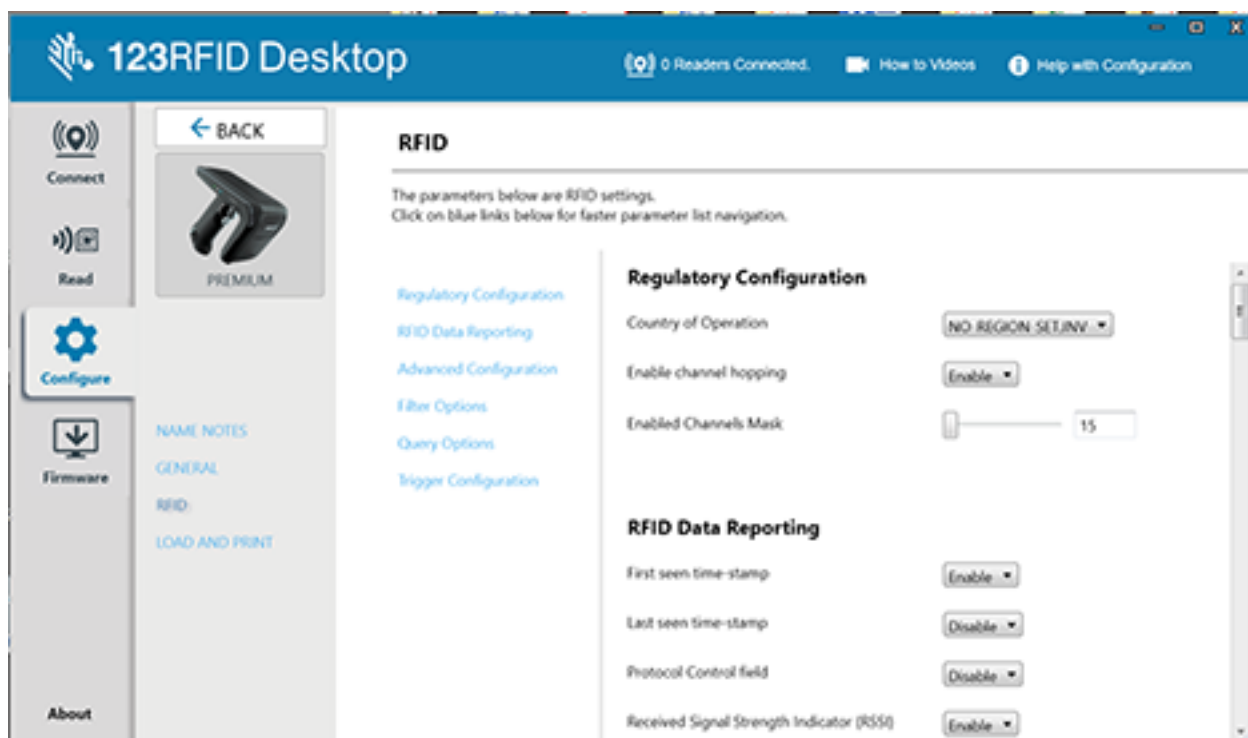
**NOTE:** Ensure that the reader is configured for the correct region it is used in. Configuring the device for a different region is illegal.

Offline Configurable options include:

- Regulatory Configuration options such as setting the country of operation and enabling or disabling Channel Hooping and Channel Mask.
- RFID Data Reporting options such as first and last time seen time stamps, RSSI, phase difference, unique tag reporting, and the total amount of tags seen.

- Advanced Configuration options such as enabling Link Profile, configuring the RFID Transmit Power Level, and enabling dynamic power optimization.
- Filter Options for up to four filters, including Filter enable, target, action, memory bank, truncate, length, start position, and mask.
- Query Options such as selecting which tags, session, and target the query is applied to.
- Trigger Configuration such as defining RFID operations and the conditions in which they are initiated and stopped.





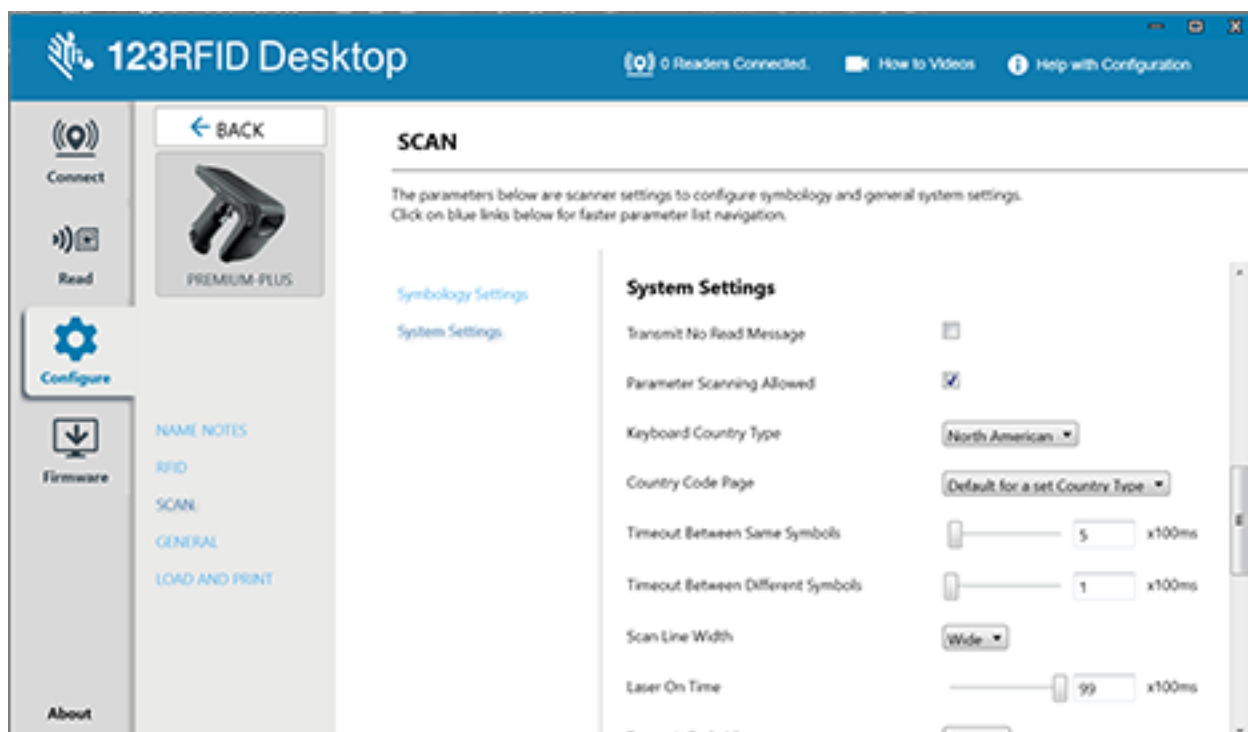
## Scanning Configuration

Configurable scanning settings include enabling or disabling specific symbologies and enabling/disabling particular settings at the system level, such as transmitting the no-read message or the device's trigger mode.



**NOTE:** Scanning configuration is available on RFD4031 Premium+ UHF RFID sleds only.

- Symbology Settings – users can configure and enable/disable specific symbologies.
- System Settings – users can configure and enable/disable specific settings at the system level, such as transmitting the no-read message or the device's trigger mode.



## Configuration Creation

The 123RFID Desktop application allows users to create, save, and deploy configurations.

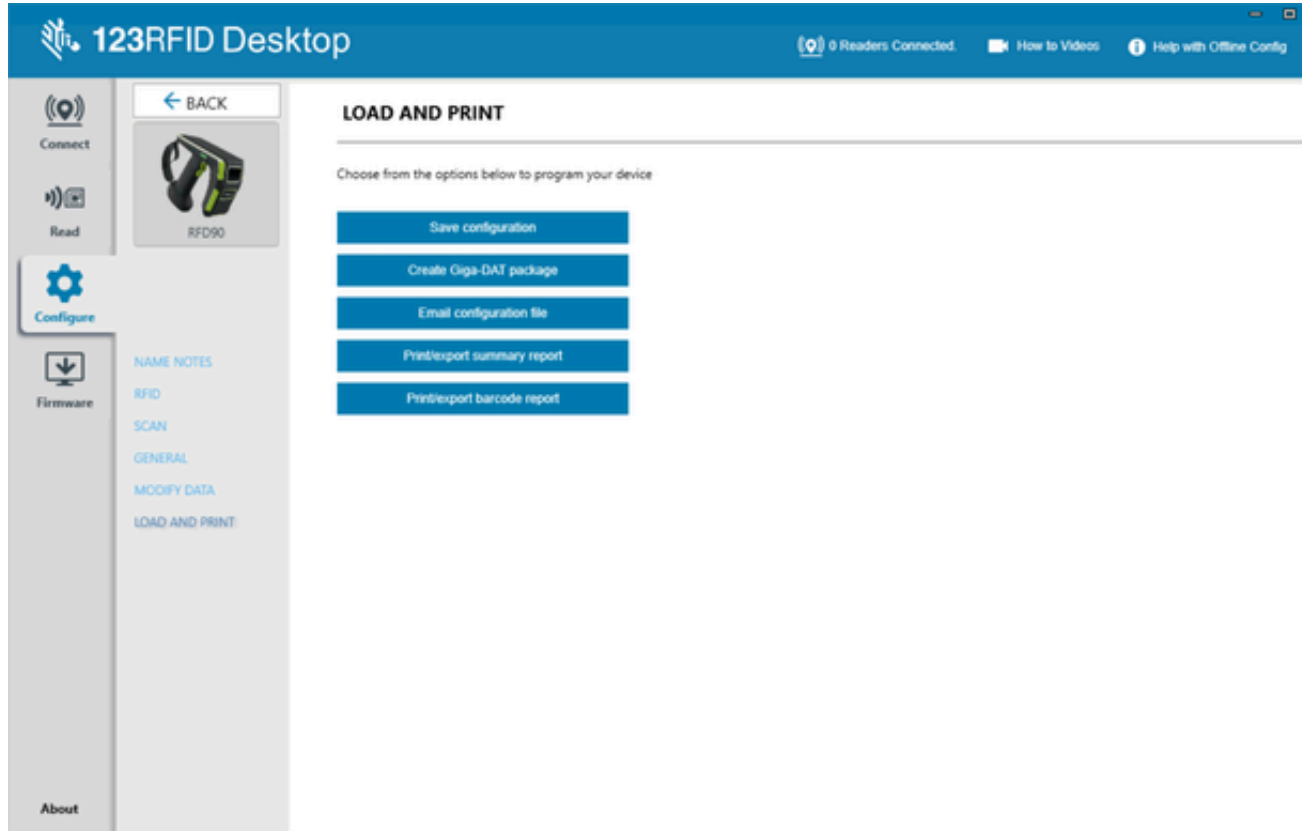
To create a new configuration file:

1. Launch the 123RFID Desktop application and open the **Configuration** tab.
2. Select **Offline** configuration.
3. Select the reader for the new configuration to be deployed on
4. Add **Configuration Name & Notes** for the new configuration file & Giga-DAT File.
5. Select the proper region information for the regulatory section.
6. For RFD40 Premium+ and RFD90 devices only, configure the scanning parameters from the **Symbology** and **System** settings.
7. Configure the settings on the **General** panel.
8. Save the configuration file locally on the PC by clicking **Save Configuration**.

To create a Giga-DAT package, begin by following steps 1-8 from the procedure below.

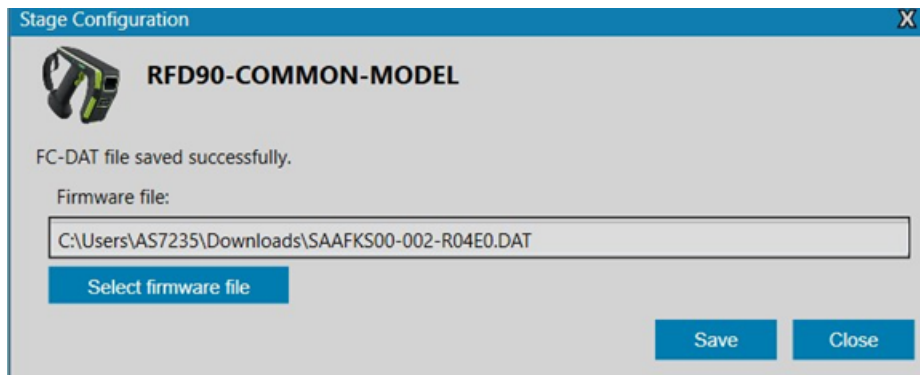
1. Select **Offline** configuration for RFD90.
2. Create a Name and Notes for the Giga-Dat file.
3. Choose the appropriate regulatory settings for the country of operation for device configuration.

4. Configure settings for the RD90, including Scanner Symbologies, RFID power levels, and RFID singulation.



5. Select **Load and Print**.
6. Select **Create Giga DAT** package.
7. Observe the **Staged Configuration** dialog box and select the firmware file.
8. Navigate to the appropriate configuration file and click **Open**. The firmware file name displays in the **Staged Configuration** window.
9. Click **Save** to save the Giga DAT file.

The **Stage Configuration** window updates to indicate that the new Giga-DAT File is successfully saved.

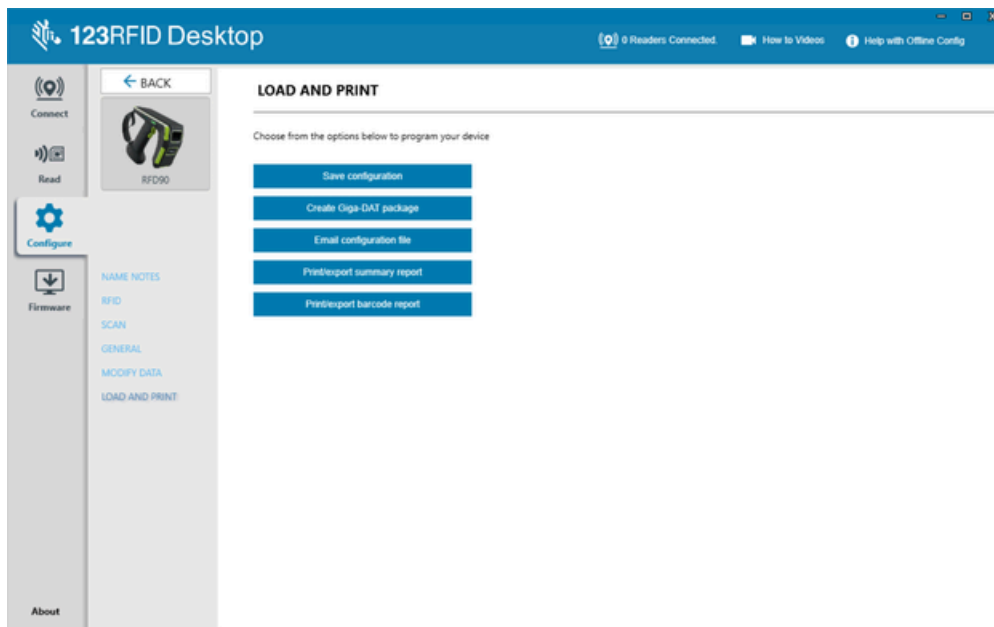


To load a Giga-DAT package:

1. Connect to a RFD90 sled.
2. Click the **Configure** tab.
3. Select **Load a Saved Config File to Reader**.
4. Select the appropriate Giga-Dat file to load onto the device.
5. Select the RFD90 from **Available readers**.
6. Select **Load Configuration to readers**.

## Print Configuration

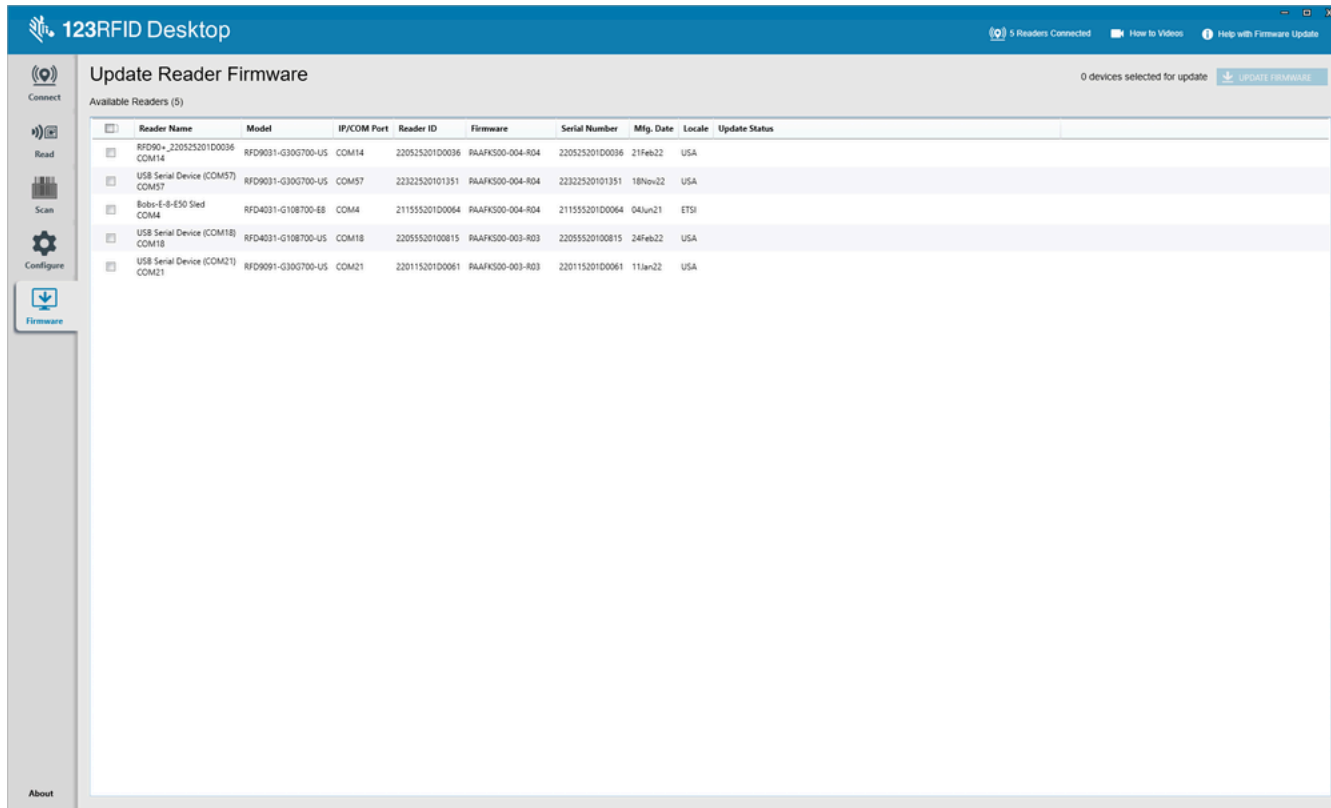
Load the configuration file to the PC, push the antenna settings to the reader, or reset the antenna settings to factory defaults at the end of the configuration workflow.





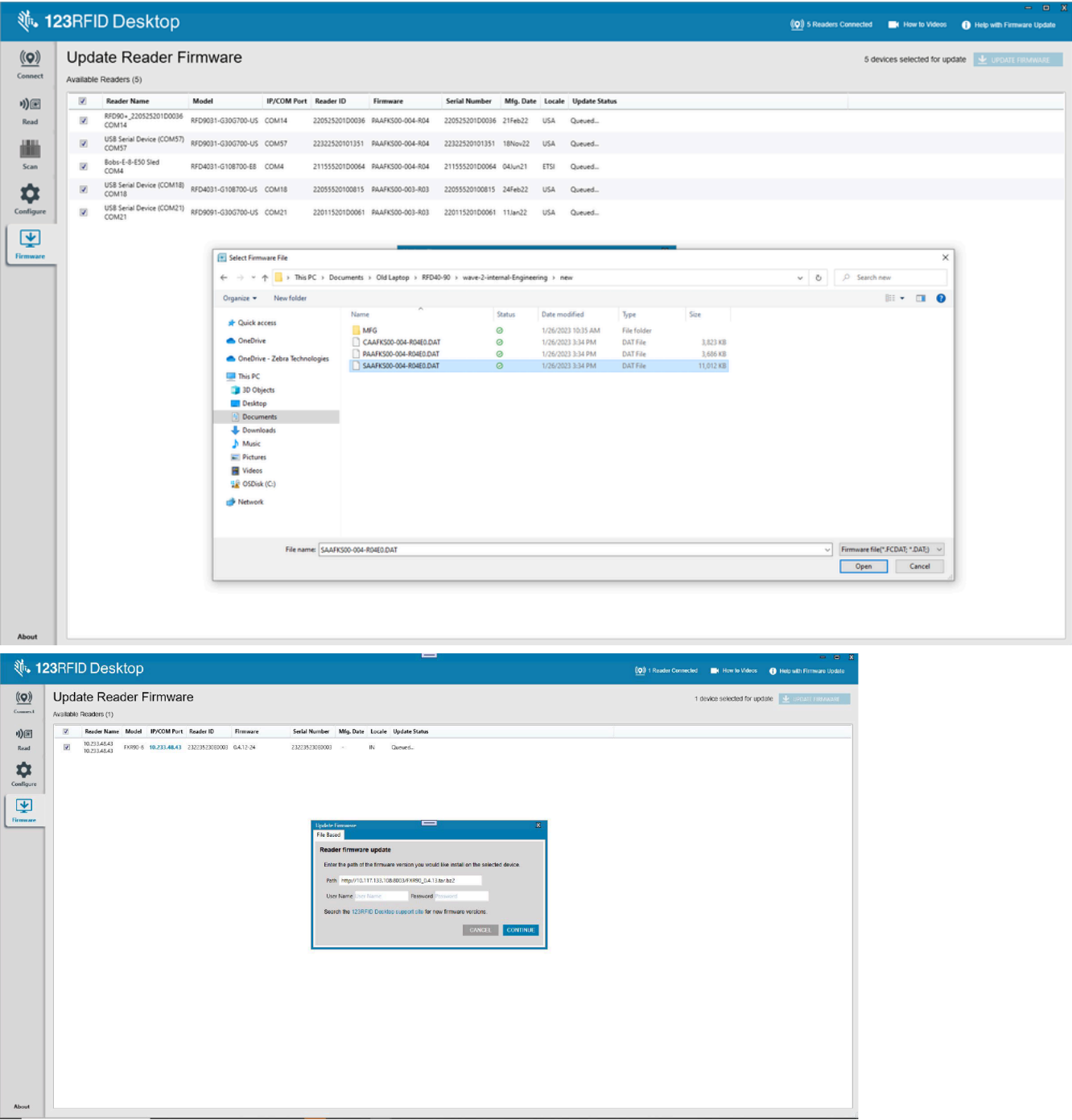
## Firmware Management

To update reader firmware on up to five devices simultaneously, select the devices on the table by clicking the associated checkbox and clicking **Update Firmware**.

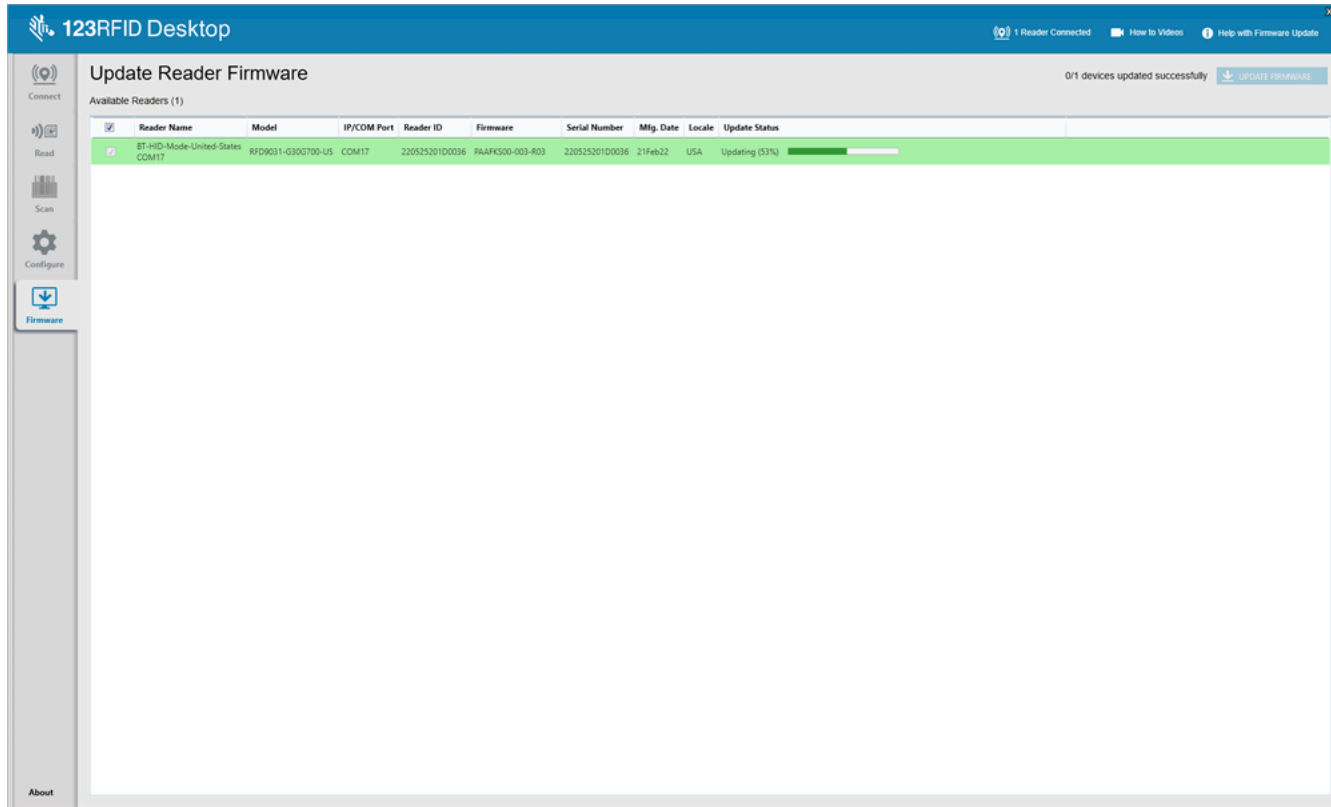


Next, the **Update Reader Firmware** window displays. Click **Browse** to select the firmware version to enable on the device.

# 123RFID Desktop Application



Once the firmware file is selected, the update starts and the progress bars next to the associated readers indicate the completion percentage of the update.



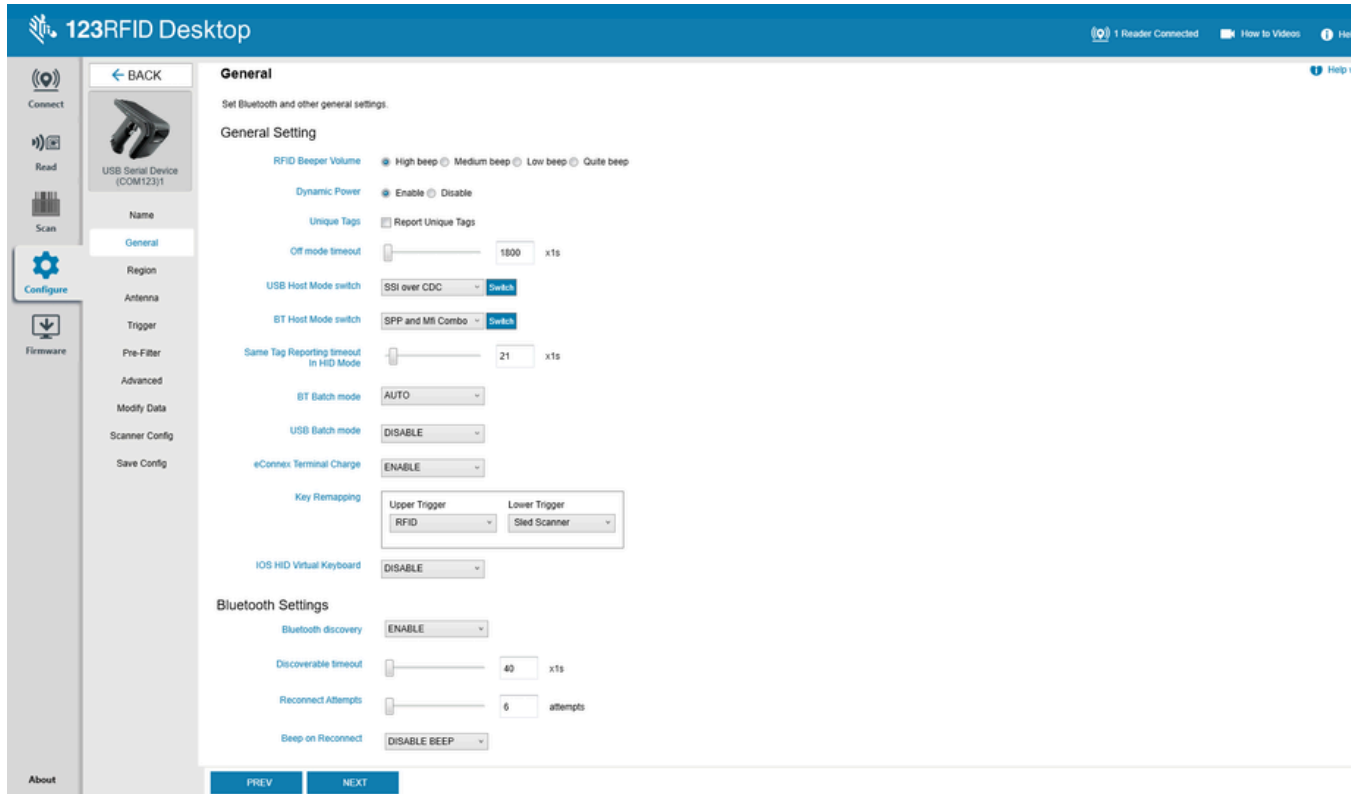
## Bluetooth Settings

123RFID Desktop tool can discover, connect, and configure Bluetooth settings for online and offline readers. This section provides information about Bluetooth configuration changes for online and offline readers, including enabling and disabling discovery and configuring the discovery timeout.

There are three modes of Bluetooth discovery:

1. Always discoverable: Enabling Bluetooth discovery and setting the discoverable timeout value to 0 changes the Bluetooth to always be discoverable and always available for pairing.
2. Never discoverable: Disabling Bluetooth discovery changes the Bluetooth to never be discovered, and the device is unavailable for pairing.
3. Limited discovery or Time Out: Enabling Bluetooth discovery and providing the Discoverable timeout value makes the device pairable for the specified time.

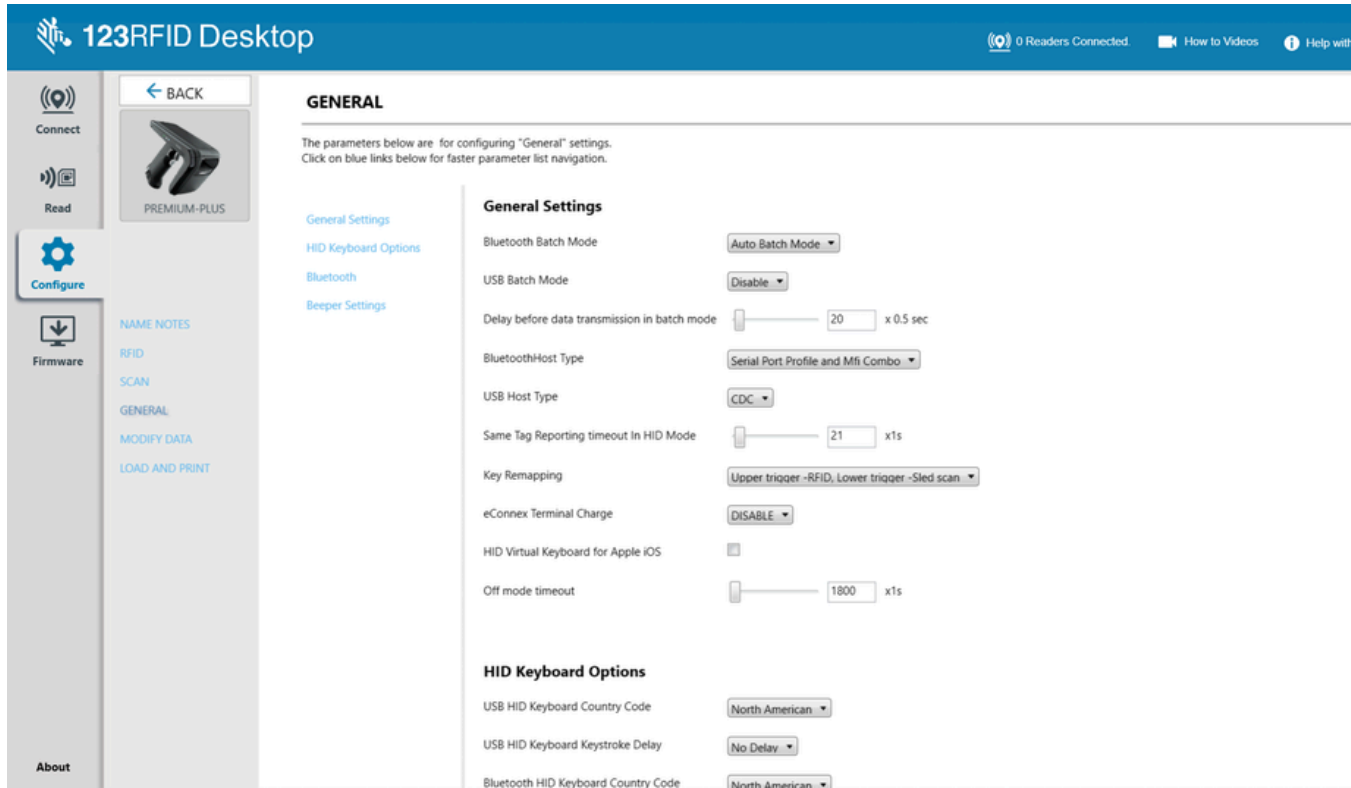
To configure online Bluetooth settings:



1. Launch 123RFID Desktop
2. Click **Find Readers**. Readers that are available to connect are listed under the Available Readers section.
3. Click **Connect** next to the reader you intend to connect with. Once connected, the reader moves and is listed under Connected Readers.
4. Click **Configure**, select the reader, then Edit the configuration on the reader, followed by General.
5. Change the **Bluetooth Discovery** and **Discoverable** timeout values to the desired time range. These updated settings are directly applied to the readers.

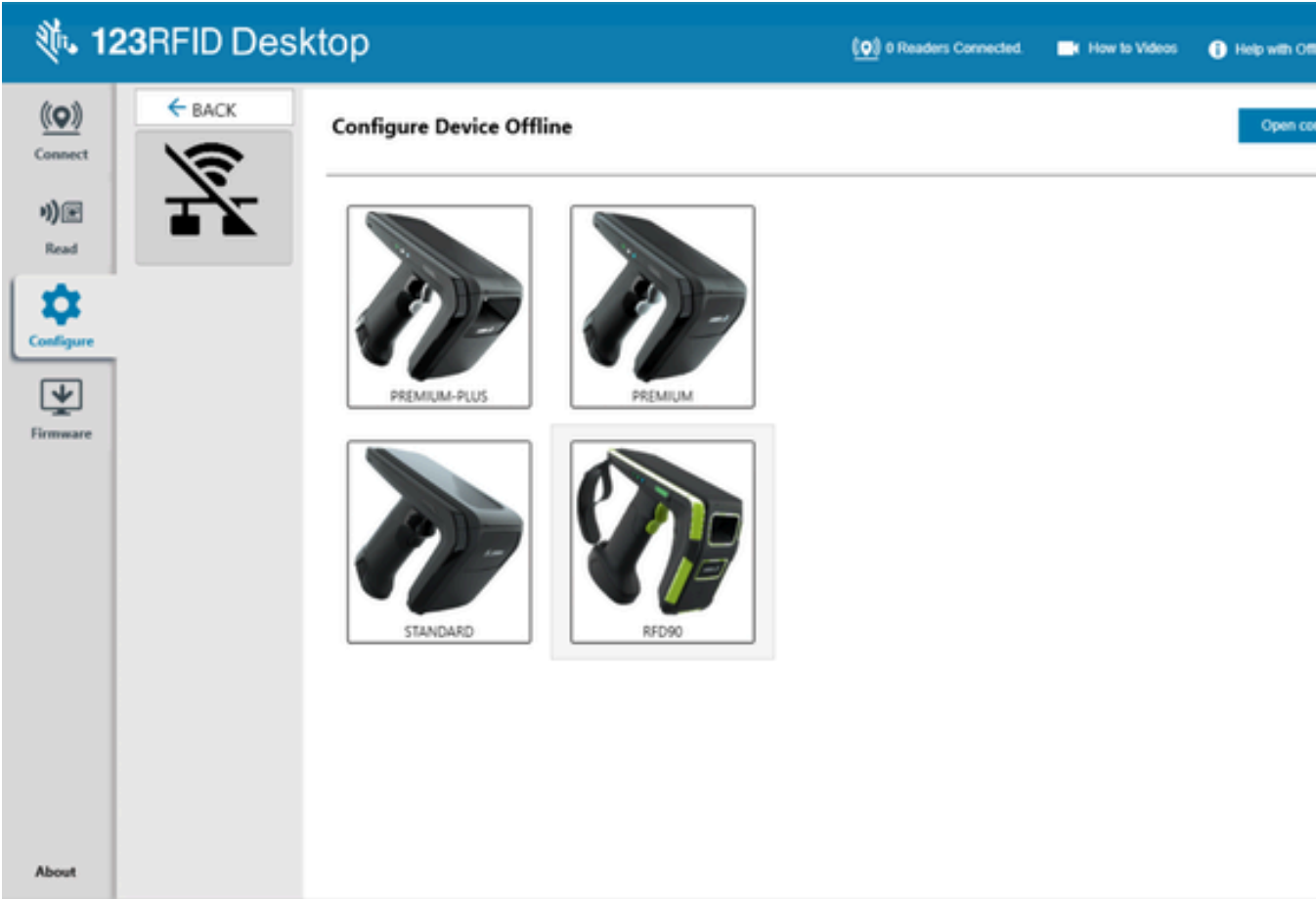
To configure offline Bluetooth settings:

1. Launch 123RFID Desktop
2. On the **Configure** tab, click **Offline Configuration** and select **Bluetooth** as the **Plugin Type**.
3. Configure the Bluetooth settings and save the configuration in either .rfdcpg or .DAT format.

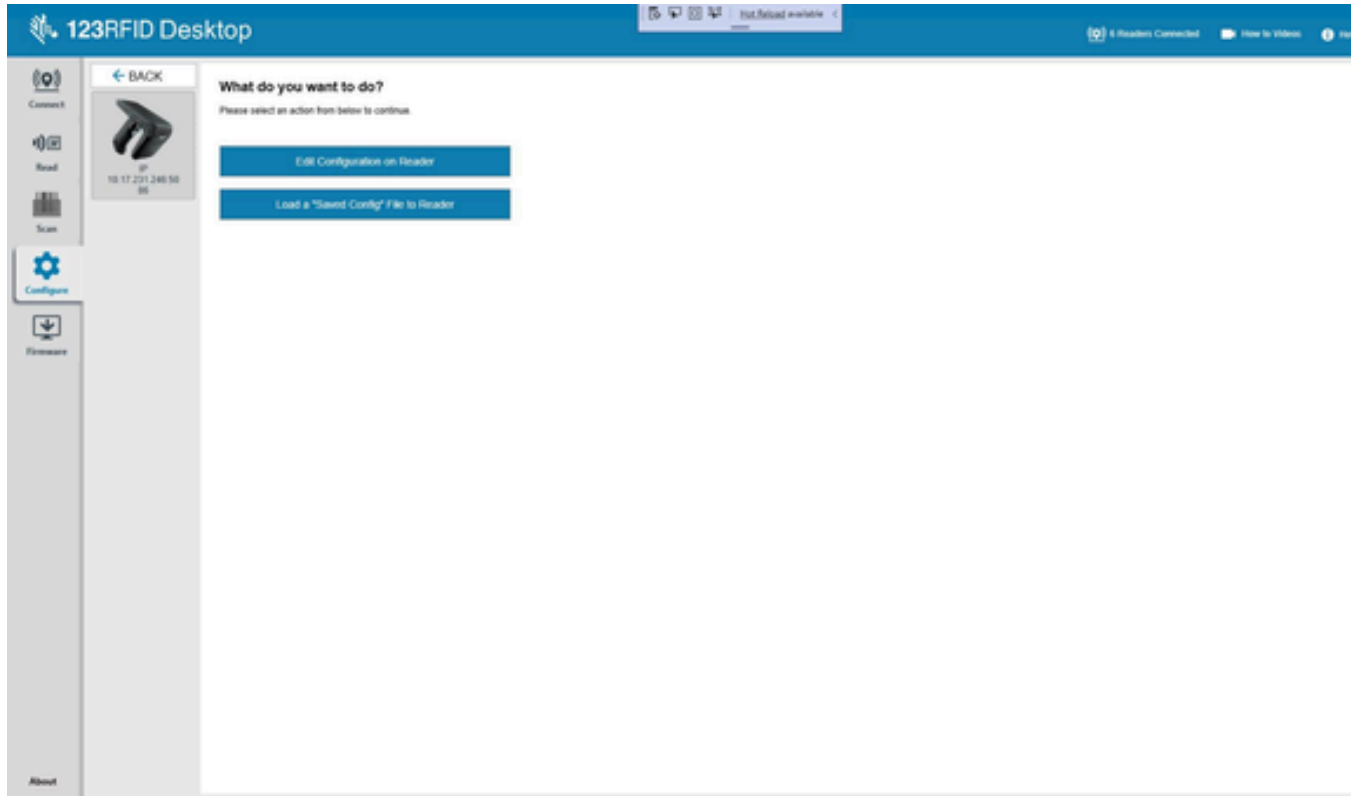


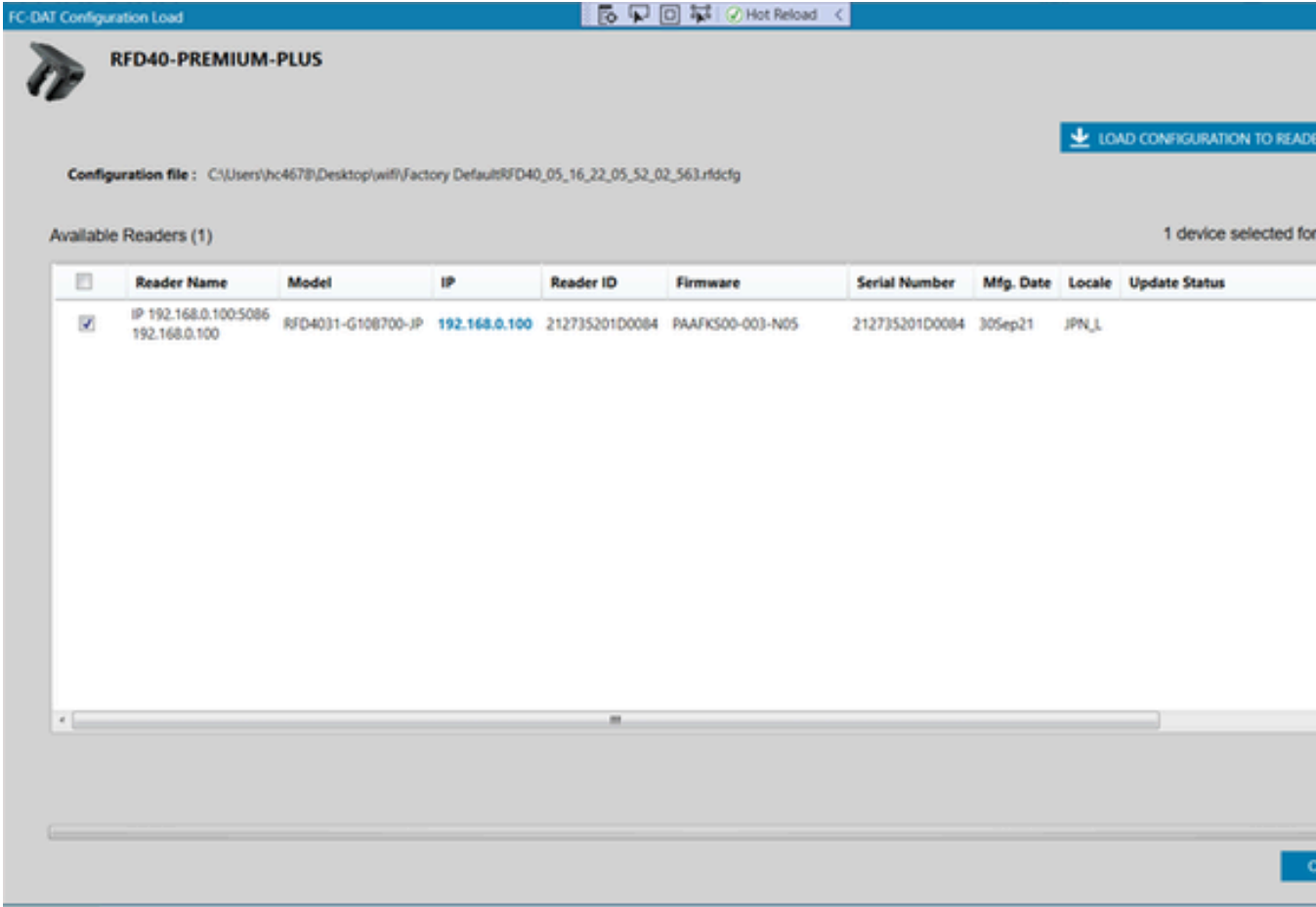
To connect the reader and load the configuration file:

1. Select the reader on the **Configure** tab and click **Load a Saved config file to the reader**.
2. Browse to the saved configuration file. The load configuration window displays.
3. Click **Load Configuration to Readers**.



# 123RFID Desktop Application





Connecting to the Multi-Slot Cradle

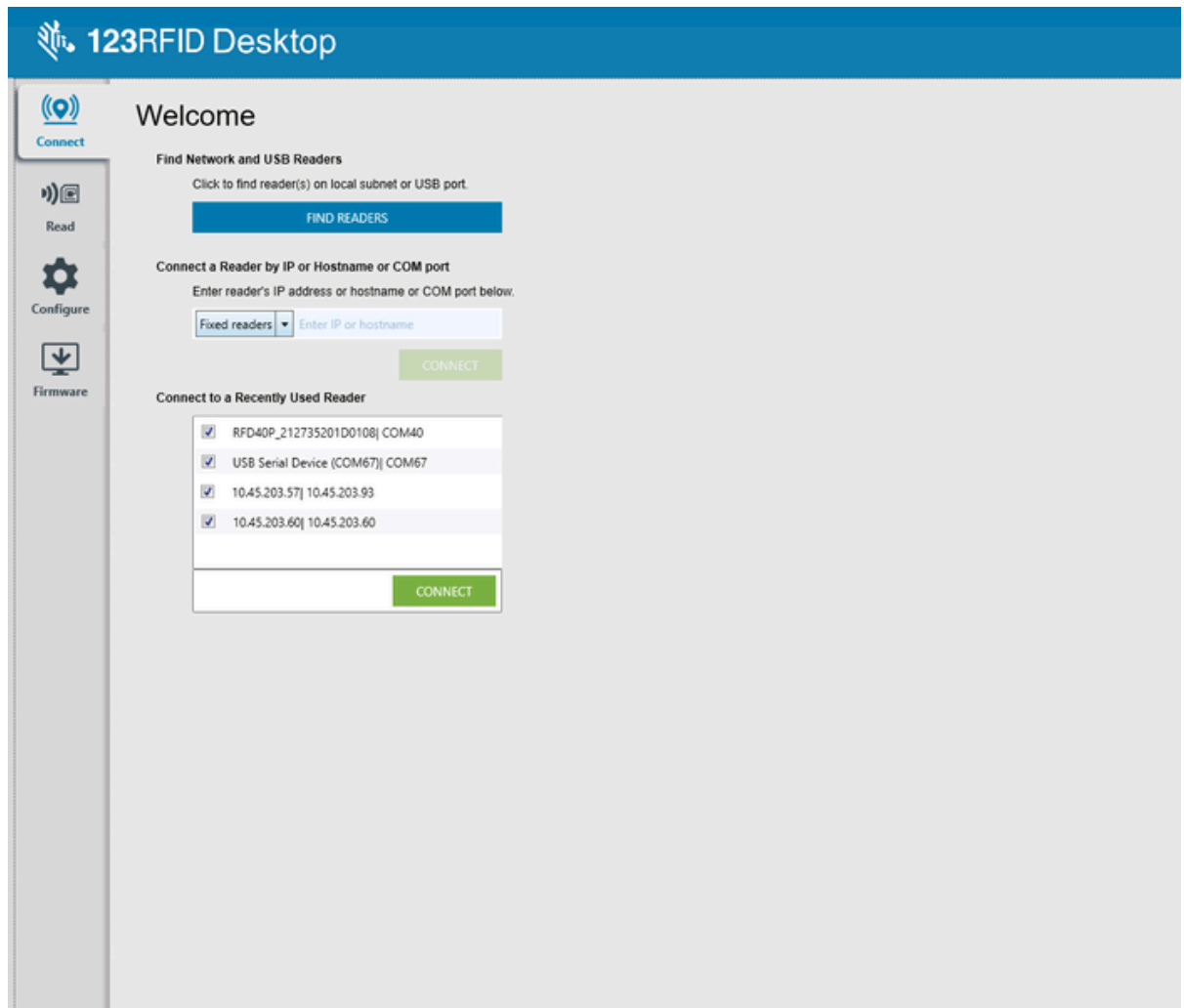
The 123RFID Desktop tool can also be used to discover, connect, and perform RFID and scanning operations for Zebra UHF RFID sleds using the multi-slot cradle. This section provides the steps necessary to discover and connect to the multi-slot cradle.

To discover and connect to the device:

- 1. Keep the device in the cradle and run 123RFID Desktop.



2. Click **Find Readers** to view available devices to connect to.



3. Click the **Connect** next to the device to connect to it. Once connected, the device is listed under the **Connected Readers** section

# 123RFID Desktop Application

The screenshot displays the 123RFID Desktop application interface. The top bar shows '2 Readers Connected' and links to 'How to Videos' and 'Help with Discovery'. The main section is titled 'Reader Discovery' and is divided into two parts: 'Connected Readers' and 'Available Readers (14)'.

**Connected Readers:**

READ	DISCONNECT ALL	Reader Name	Model	IP/COM Port	Reader ID	Firmware	Serial Number	Mfg. Date	Antennas	Country Code
<input type="checkbox"/>	DISCONNECT	IP 10.45.203.77:5086 RFD40-22055520100815.local	RFD4031-G008700-US	10.45.203.77	212735201D010E	RAAFK500-004-R04	212735201D0108	30Sep21	●	USA
<input type="checkbox"/>	DISCONNECT	IP 10.45.203.84:5086 RFD40-211555201D0064.local	RFD4031-G108700-ES	10.45.203.84	211555201D0064	RAAFK500-004-R04	211555201D0064	04Jun21	●	ETSI

**Available Readers (14):**

	Reader Name	Model	IP/COM Port	Firmware	Serial Number	Mfg. Date
PING CONNECT	FX7500F87B3 FX7500 RFID Reader	FX7500-4	10.45.203.94	3.21.21	17323010501565	2017-11-19
PING CONNECT	FX9600F828F FX9600 RFID Reader	FX9600-8	10.45.203.72	3.21.23	17299010504038	2017-10-26
PING CONNECT	10.45.203.57 FX9600F9924F	FX9600-8	10.45.203.93	3.21.21	19094010506807	2019-04-04
PING CONNECT	ATR7000F30EFE ATR RFID Reader	ATR7000-480	10.45.203.241	2.16.29	19027010503649	2019-01-27
PING CONNECT	ATR7000F3F316 ATR RFID Reader	ATR7000-480	10.45.203.242	3.21.24	-	-
PING CONNECT	FX9600FCB67A	FX9600-8	10.45.203.34	3.21.23	20269010504785	2020-09-25
PING CONNECT	FX7500B09EES FX7500 RFID Reader	FX7500-4	10.45.203.62	3.21.21	17095010502847	2017-04-05
PING CONNECT	FX7500F7F625 FX7500 RFID Reader	FX7500-4	10.45.203.85	3.21.23	-	-
PING CONNECT	IP 10.45.203.41:5086 RFD40-212735201D0067.local	RFD40-212735201D0067.local	10.45.203.41			
PING CONNECT	IP 10.45.203.44:5086 RFD90-212295201E0002.local	RFD90-212295201E0002.local	10.45.203.44			

At the bottom right, there are buttons for 'Fixed readers', 'Enter IP or hostname', 'PING', 'CONNECT', and 'FIND READERS'.

To connect to a device via IP address:

1. Keep the sled docked in the cradle for up to two minutes while the DHCP allocates the IP address.

# 123RFID Desktop Application

2. Choose any of the discovered sleds from the available readers and click Connect

**123RFID Desktop**

9 Readers Connected | View in Videos | Help with Discovery

### Reader Discovery

Connected Readers

Reader Name	Model	IP/COM Port	Reader ID	Firmware	Serial Number	Mfg. Date	Antennas	Country Code
-------------	-------	-------------	-----------	----------	---------------	-----------	----------	--------------

No readers connected.  
1. Click FIND READERS below to discover readers.  
2. Click CONNECT.

#### Available Readers (15)

Reader Name	Model	IP/COM Port	Firmware	Serial Number	Mfg. Date
PING CONNECT  F19600P10311 F19600 RFID Reader F19600P10311	F19600-8	10.41.203.64	3.21.23	1734401004409	2017-12-10
PING CONNECT  F17500B0011 F17500 RFID Reader F17500B0011	F17500-4	10.41.203.62	3.21.23	1709501000347	2017-04-05
PING CONNECT  F17500T0021 F17500 RFID Reader F17500T0021	F17500-4	10.41.203.85	3.21.23	-	-
PING CONNECT  F19600P1028 F19600 RFID Reader F19600P1028	F19600-8	10.41.203.68	3.21.23	1734001000349	2017-12-08
PING CONNECT  A767000P10071 A76 RFID Reader A767000P10071	A767000-480	10.41.203.241	2.16.29	1902701000349	2019-01-27
PING CONNECT  F19600P1014 F19600 RFID Reader F19600P1014	F19600-8	10.41.203.34	3.24.34	1904010000913	2019-04-04
PING CONNECT  IP 10.41.203.37:5086 RFID40-2115552010084.local	RFID40-2115552010084.local	10.41.203.37			
PING CONNECT  IP 10.41.203.71:5086 RFID40-2205552010087.local	RFID40-2205552010087.local	10.41.203.71			
PING CONNECT  IP 10.41.203.37:5086 RFID40-2127320100887.local	RFID40-2127320100887.local	10.41.203.37			
PING CONNECT  RFID40+_2205552010086	RFID40+_2205552010086	COM40			

RFID40 10.41.203.71 PING CONNECT FIND READERS

## 123RFID Desktop Application

3. If the connection was successful, the reader is now listed in the Connected Readers section.

**123RFID Desktop**

7 Readers Connected | How to Videos | Help with Discovery

### Reader Discovery

Connected Readers

STATUS	DISCONNECT All	Reader Name	Model	IP/COM Port	Reader ID	Firmware	Serial Number	Mfg. Date	Antennas	Country Code
<input type="checkbox"/>	DISCONNECT	IP 10.45.203.77:5086 RFID40-2205520100875.local.	RFID401-0808706-US	10.45.203.77	21073520100102	9AAFK300-004-R04	21073520100102	30Sep17	1	USA
<input type="checkbox"/>	DISCONNECT	IP 10.45.203.84:5086 RFID40-2115520100084.local.	RFID401-0108700-ES	10.45.203.84	2115520100084	9AAFK300-004-R04	2115520100084	04Jun17	1	ESP

Available Readers (14)

	Reader Name	Model	IP/COM Port	Firmware	Serial Number	Mfg. Date
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	FX7500P1703 FX7500 RFID Reader FX7500P1703	FX7500-4	10.45.203.84	3.21.21	17323010591565	2017-11-19
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	F106000P9020P F10600 RFID Reader F10600P9020P	F10600-8	10.45.203.72	3.21.23	17296010504038	2017-10-26
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	10.45.203.57 F10600P9020P	F10600-8	10.45.203.83	3.21.21	19094010506807	2019-04-04
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	ATX7000P30016 ATX RFID Reader ATX7000P30016	ATX7000-480	10.45.203.243	2.16.28	18627010503649	2019-01-27
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	ATX7000P31316 ATX RFID Reader ATX7000P31316	ATX7000-480	10.45.203.242	3.21.24	-	-
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	F10600P38176	F10600-8	10.45.203.34	3.21.23	20266010534785	2020-09-25
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	FX7500P09023 FX7500 RFID Reader FX7500P09023	FX7500-4	10.45.203.62	3.21.21	17095010503847	2017-04-05
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	FX7500P19925 FX7500 RFID Reader FX7500P19925	FX7500-4	10.45.203.85	3.21.23	-	-
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	IP 10.45.203.41:5086 RFID40-21273520100067.local.	RFID40-21273520100067.local.	10.45.203.61			
<input type="button" value="PING"/> <input type="button" value="CONNECT"/>	IP 10.45.203.44:5086 RFID40-21229520100002.local.	RFID40-21229520100002.local.	10.45.203.64			

Read readers | Enter IP or hostname |

# Troubleshooting

The following table outlines possible troubleshooting cases when using the sled related to data communication, barcode decode, and Bluetooth.

**Table 11** Troubleshooting the RFD4031

Problem	Cause	Solution
The RFID sled does not read tags.	The RF region configuration is not set.	Use the 123RFID Desktop or 123RFDID Mobile application to set the regulatory region or country operation per the application instructions.
The RFID sled is attached to the mobile device and is not responsive to an RFID application, even after the trigger is pressed.	The battery is too low and not able to power the RFID sled.	Press the trigger for a few seconds to power the RFID sled On. The RFID sled LED blinks amber when it is turned On. (By default, pressing the trigger turns On the RFID sled if it is in Off mode. However, the RFID sled can be disabled, in which case this step is unnecessary.) Place the RFID sled in the charging cradle. The RFID sled blinks amber LEDs, indicating charging has commenced.
	The zebra-supported mobile computer is not inserted correctly in the RFID Sled.	Reinsert the Zebra-supported mobile device securely in the RFID sled and ensure the USB cable is correctly inserted.
	Damaged battery.	If the RFD4031 RFID sled LED does not blink amber after sitting on the charging cradle, request the service to replace the battery.
The RFID31 sled is responsive but cannot read tags.	The battery is critically low.	Place the RFID sled in the charging cradle. The RFID Sled LED blinks amber. The RFID sled can be used when its LED turns on momentarily amber or green upon removal from the charging cradle.

**Table 11** Troubleshooting the RFD4031 (Continued)

Problem	Cause	Solution
The RFD4031 RFID sled LED blinks fast amber when in the cradle.	Charging error.	Restart charging by removing the RFID sled from the cradle and inserting it back into it. If the issue persists, request service to replace the battery.
The RFID sled LED blinks red, or LED blinks red alternating with green or amber while in use (not while charging).	Battery end-of-life indication.	Request service to replace the battery.
Zebra-supported mobile computer battery is not charging.	The charging cradle was unplugged from AC power.	Ensure the charging cradle is receiving power.
	The Zebra-supported mobile computer is not fully seated in the cradle.	Remove and reinsert the zebra-supported mobile computer into the cradle, ensuring it is firmly seated in the charging cradle.
<b>Data Communication</b>		
During data communication with a host computer, no data transmitted or transmitted data was incomplete.	Sled removed from cradle during communication.	Replace the sled in the cradle and re-transmit.
	Incorrect cable configuration.	See the system administrator.
	Communication software was incorrectly installed or configured.	Perform setup.
During data communication over Wi-Fi, no data was transmitted, or transmitted data was incomplete.	The Wi-Fi radio is not on.	Turn on the Wi-Fi radio.
	The user moved out of the range of an access point.	Move closer to an access point.
During data communication over Bluetooth, no data transmitted or transmitted data was incomplete.	The Bluetooth radio is not on.	Turn on the Bluetooth radio.
	You moved out of range of another Bluetooth device.	Move within 10 meters (32.8 feet) of the other device.
<b>Decode</b>		
The sled does not decode with a reading barcode.	The scanning application is not loaded.	Load 123RFID Mobile on the device or 123RFID Desktop on the PC. See the system administrator.
	Unreadable barcode.	Ensure the symbol is not defaced.
	The distance between the exit window and barcode is incorrect.	Place the device within the proper scanning range.
	The device is not programmed to generate a beep.	If the sled does not beep on a good decode, set the application to generate a beep on a good decode.

**Table 11** Troubleshooting the RFD4031 (Continued)

Problem	Cause	Solution
	The battery is low.	Check the battery level if the sled stops emitting a laser beam upon a trigger press. When the battery is low, the sled shuts off before the low battery condition notification.
<b>Bluetooth</b>		
The device cannot find any Bluetooth devices nearby.	Too far from other Bluetooth devices.	Move closer to the other Bluetooth device(s) within a range of 10 meters (32.8 feet).
	The Bluetooth device(s) nearby are not turned on.	Turn on the Bluetooth device(s) to find.
	The Bluetooth device(s) are not in discoverable mode.	Set the Bluetooth device(s) to discoverable mode.

